

Section 1 : Summary of key results

Benefit obligations & assets

All monetary amounts shown in U.S. Dollars

Measurement Date		December 31, 2019	December 31, 2018
Plan Assets	Fair value of assets (FVA)	3,113,999	2,101,570
Benefit Obligations	Postemployment benefit obligation	(72,797,959)	(70,919,791)
Funded Position	FVA minus obligation	(69,683,960)	(68,818,221)
Funded Ratios	FVA to obligation	4.3%	3.0%
Assumptions	Discount rate	1.85%	2.65%
	Current health care cost trend rate	6.00%	6.25%
	Ultimate health care cost trend rate	4.50%	5.00%
	Years to ultimate trend rate	6	5
Participant Data	Census date	12/31/2019	12/31/2018

Comments on results

The funded position decreased from \$(68,818,221) to \$(69,683,960), which was less than the expected \$3 million decrease. Significant reasons for the changes in the unfunded benefit obligation since the prior year include the following:

- Demographic gains for LTD claimants, due to more claim terminations and fewer new disabilities than expected, decreased the benefit obligations.
- Per capita claims costs increased by less than was expected, which decreased the benefit obligations.
- The assumed ultimate trend rate was lowered from 5.0% to 4.5%, which decreased the benefit obligations.
- The discount rate, based on U.S. Treasury constant maturity yields, decreased from 2.65% to 1.85%, resulting in an increase to benefit obligations.
- Increased funding of the LTD VEBA resulted in an additional \$1 million of plan assets at year-end 2019

Basis for valuation

Appendix A summarizes the assumptions and methods used in the valuation. Appendix B summarizes our understanding of the principal provisions of the plans being valued. Unless otherwise described below under Subsequent events, assumptions were selected based on information known as of the measurement date.

Changes in assumptions

- Plan cost rates, employee contribution rates, and COBRA rates for 2020 have been used as a basis for this valuation.
- The discount rate has been updated to reflect Treasury Constant Maturities of as December 31, 2019, which decreased the rate from 2.65% as of December 31, 2018, to 1.85% as of December 31, 2019.
- The base healthy mortality rates have been updated from RP-2014, factored to 2006, to Pri-2012 and the mortality improvement scale has been updated from a modified version of MP-2018 adjusted to reflect 75% of the long-term improvement rates to a modified version of MP-2019 adjusted to reflect 75% of the long-term improvement rates.
- Ultimate health care trend was lowered to 4.50%.

Changes in methods or estimation techniques

None.

Changes in benefits valued

None.

Subsequent events

None.

Actuarial certification

This valuation has been conducted in accordance with generally accepted actuarial principles and practices

Reliances

In preparing the results presented in this report, we have relied upon information provided to us regarding plan provisions, participants, claims data, monthly contribution rates and plan assets (if any) provided by AEP and other persons or organizations designated by AEP. We have relied on all the data and information provided as complete and accurate. We have reviewed this information for overall reasonableness and consistency, but have neither audited nor independently verified this information. Based on discussions with and concurrence by the plan sponsor, assumptions or estimates may have been made if data were not available. We are not aware of any errors or omissions in the data that would have a significant effect on the results of our calculations.

We have relied on all the information provided as complete and accurate. The accuracy of the results presented in this report is dependent upon the accuracy and completeness of the underlying information. Any material inaccuracy in the data, assets, plan provisions or other information provided to us may have produced results that are not suitable for the purposes of this report and such inaccuracies, as corrected by AEP, may produce materially different results that could require that a revised report be issued.

Measurement of benefit obligations, plan assets and balance sheet adjustments

Census date/measurement date

The measurement date is December 31, 2019. The benefit obligations were measured as of AEP's December 31, 2019, fiscal year end and are based on participant data as of the census date, which is summarized in Section 3.

Plan assets and balance sheet adjustments

Information about the fair value of plan assets was furnished to us by AEP. Willis Towers Watson used information supplied by AEP regarding postemployment benefit asset and postemployment benefit liability as of December 31, 2019. These data were reviewed for reasonableness and consistency, but no audit was performed.

Assumptions and methods under U.S. GAAP

As required by U.S. GAAP, the actuarial assumptions and methods employed in the development of the postemployment benefit liability have been selected by AEP. Willis Towers Watson has concurred with these assumptions and methods. U.S. GAAP requires that each significant assumption "individually represent the best estimate of a particular future event."

The results shown in this report have been developed based on actuarial assumptions that, to the extent evaluated by Willis Towers Watson, we consider to be reasonable. Other actuarial assumptions could also be considered to be reasonable. Thus, reasonable results differing from those presented in this report could have been developed by selecting different reasonable assumptions.

A summary of the assumptions and methods used is provided in Appendix A. Note that any subsequent changes in methods or assumptions for the December 31, 2019 measurement date will change the results shown in this report.

Nature of actuarial calculations

The results shown in this report are estimates based on data that may be imperfect and on assumptions about future events that cannot be predicted with certainty. The effects of certain plan provisions may be approximated or determined to be insignificant and therefore not valued. Assumptions may have been made, in consultation with AEP, about participant data or other factors. Reasonable efforts were made in preparing this valuation to confirm that items that are significant in the context of the actuarial liabilities are treated appropriately and are not excluded or included inappropriately. Any rounding (or lack thereof) used for displaying numbers in this report is not intended to imply a degree of precision; by their nature, actuarial calculations are not precise.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to many factors, including: plan experience differing from that anticipated by the economic or demographic assumptions, changes in economic or demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for the measurements, and changes in plan provisions or applicable law. It is beyond the scope of this valuation to analyze the potential range of future postretirement welfare contributions, but we can do so upon request. Postemployment group benefits models necessarily rely on the use of approximations and estimates and are sensitive to changes in these approximations and estimates. Small variations in these approximations and estimates may lead to significant changes in actuarial measurements.

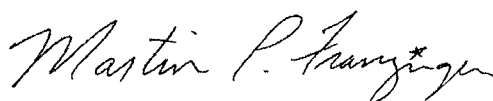
Limitations on use

This report is provided subject to the terms set out herein and in our master consulting services agreement dated July 29, 2004, and any accompanying or referenced terms and conditions.

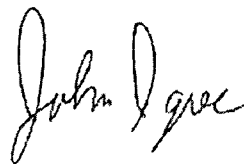
The information contained in this report was prepared for the internal use of AEP and its auditors in connection with our actuarial valuation of the postemployment benefit plan as described in Purposes of Valuation above. It is not intended for and may not be used for other purposes, and we accept no responsibility or liability in this regard. AEP may distribute this actuarial valuation report to the appropriate authorities who have the legal right to require AEP to provide them this report, in which case AEP will use best efforts to notify Willis Towers Watson in advance of this distribution. Further distribution to, or use by, other parties of all or part of this report is expressly prohibited without Willis Towers Watson's prior written consent. Willis Towers Watson accepts no responsibility for any consequences arising from any other party relying on this report or any advice relating to its contents.

Professional qualifications

The undersigned consulting actuaries are members of the Society of Actuaries and meets their "Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States" relating to postemployment benefit plans. Our objectivity is not impaired by any relationship between the plan sponsor and our employer, Willis Towers Watson US LLC.



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Pricing Specialist and Valuation Actuary



John Igrac, FSA, MAAA
Valuation Actuary

Willis Towers Watson US LLC

April 2020

http://natct.internal.towerswatson.com/clients/604598/HBFARM2020/Financials1/LTD_Val_Report_2020.docx

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Section 2: Postemployment benefits obligation

This report summarizes the financial results for AEP's postemployment benefit plan, including the effect of the Medicare Part D subsidy, based upon an actuarial valuation of the income replacement, life insurance and health care continuation benefits during long-term disability and COBRA as of December 31, 2019. The accounting for the benefits not attributable to employee service, income, life insurance and contributory health care continuation is subject to ASC 450-20 for benefits that do not accumulate.

Benefits That Do Not Vest or Accumulate (ASC 450-20)		
	December 31, 2019	December 31, 2018
Benefit Obligation and Funded Status		
Health care and life insurance continuation benefits during LTD		
■ Medical benefits	\$ 31,459,989	\$ 30,265,817
■ Basic life insurance	7,682,686	7,250,953
■ Supplemental life insurance	7,711,375	7,513,462
■ Dental benefits	<u>531,337</u>	<u>561,919</u>
Total benefit obligation	\$ 47,385,387	\$ 45,592,151
Plan assets	<u>0</u>	<u>0</u>
Unfunded liability	\$ 47,385,387	\$ 45,592,151
Income replacement (LTD) plan		
Benefit obligation	\$ 25,124,769	\$ 25,222,525
Plan assets	<u>(3,113,999)</u>	<u>(2,101,570)</u>
Unfunded liability	\$ 22,010,770	\$ 23,120,955
COBRA		
Benefit obligation	\$ 287,803	\$ 105,115
Plan assets	<u>0</u>	<u>0</u>
Unfunded liability	\$ 287,803	\$ 105,115
Total		
Benefit obligation	\$ 72,797,959	\$ 70,919,791
Plan assets	<u>(3,113,999)</u>	<u>(2,101,570)</u>
Unfunded liability	\$ 69,683,960	\$ 68,818,221

Change in unfunded liabilities from prior year

In total, our calculations of FASB ASC 712 unfunded liability as of December 31, 2019, for the postemployment benefits that Willis Towers Watson values is \$66.6 million which was a decrease of \$0.9 million from the total unfunded liability as of December 31, 2018.

Summary of Unfunded Liability Increase/(Decrease)

Non-UMWA

■ Health Care and Life Insurance Continuation for LTD Claimants	\$ 1.8 million
■ LTD Income Replacement	(1.1) million
■ COBRA	0.2 million
Total	\$ 0.9 million

The discount rate has decreased from 2.65% to 1.85% and is determined based on a duration matching approach using a risk-free bond universe with the plan's expected cash flows. The duration of AEP's postemployment benefit plan, excluding COBRA and severance benefits, is 3.32 years as of December 31, 2019. The changes in liabilities are analyzed below for each benefit.

Health Care and Life Insurance Continuation for LTD Claimants

During 2019, the liability estimate for these benefits decreased from \$45.6 million to \$47.4 million. This \$1.8 million increase results from the following factors:

	Medical	Life Insurance	Dental	Total
December 31, 2018, Liability	\$30,265,817	\$14,764,415	\$561,919	\$45,592,151
Increase/(Decrease) due to				
Normal operation of the plan	1,197,732	215,227	(4,832)	1,408,127
Claims experience	(1,718,824)	0	(31,763)	(1,750,587)
Demographic experience	1,065,683	28,480	(11,402)	1,082,761
Trend assumption change	(99,980)	0	0	(99,980)
Other assumption changes	749,561	385,939	17,415	1,152,915
December 31, 2019, Liability	\$31,459,989	\$15,394,061	\$531,337	\$47,385,387

LTD Income Replacement

During 2019, the liability estimate (under ASC 712) decreased from \$25.2 million to \$25.1 million. This \$0.1 million decrease results from the following factors

December 31, 2018, Liability	\$25,222,525
Increase/(Decrease) due to	
Normal operation of the plan	1,853,034
Demographic experience	(2,651,963)
Economic assumption changes	<u>701,173</u>
December 31, 2019, Liability	\$25,124,769

In addition to the \$0.1 million liability decrease, there was a \$1.0 million increase in plan assets, leading to a \$1.1 million decrease in the LTD plan's unfunded liability under ASC 712.

There is also a significant unfunded liability of \$26.1 million as of December 31, 2019, measured under Internal Revenue Code Section 419A. Therefore, all contributions AEP made to the LTD VEBA in 2019 are tax deductible in 2019 and none of the trust's 2019 investment income needs to be reported as Unrelated Business Taxable Income (UBTI). The components of this calculation are

Funded Status of LTD VEBA as of December 31, 2019

	<i>AEP East Disabled Before 1996</i>	<i>Post-3/31/1998 East and Post-12/31/2000 West Disabilities</i>			<i>Total</i>
		<i>Approved</i>	<i>IBNA¹</i>	<i>Subtotal</i>	
(1) Plan Assets					3,113,999
(2) Plan Liabilities					
(a) Claims Cost Liability	45,000	25,125,000	3,817,000	28,942,000	28,987,000
(b) DEFRA Limitations ²	<u>0</u>	<u>0</u>	<u>2,936,000</u>	<u>2,936,000</u>	<u>2,936,000</u>
(c) DEFRA-Limited Claims (a) - (b)	45,000	25,125,000	881,000	26,006,000	26,051,000
(d) Administrative Costs					<u>3,194,000</u>
(e) QAAL--Total Plan Liability (c) + (d)					29,245,000
(3) Surplus/(Unfunded Liability)					
(a) Based on Unlimited Liability (1) - (2a) - (2d)					(29,067,001)
(b) Based on QAAL (1) - (2e)					(26,131,001)
(4) Number of Approved Claimants	2	330		330	332

¹ Incurred but not approved

² Exclusion of liability for projected benefit payments to claimants who have not been disabled for at least 5 months

COBRA and Severance

The liabilities as of December 31, 2019, associated with COBRA continuation coverage for medical and dental benefits have been included for all AEP companies. Liabilities were calculated for participants and assigned to the AEP company for which they last worked.

The liabilities were determined assuming that COBRA beneficiaries would incur claims costs equal to 154% of the per capita claims costs for active employees. No termination rates or increased claims cost morbidity was assumed for former employees receiving severance benefits because their monthly contributions to continue AEP's coverage was equal to the contributions charged to active participants.

This liability increased by \$0.2 million during 2019, primarily due to an increase in COBRA enrolment.

Highlights

Actuarial and economic assumptions

The discount rates for determining the obligations reflect the time value of money as of the measurement date. This rate for ASC 450-20 obligations is based on matching Treasury constant maturities to the plan's expected cash flows. Rounding is done to the nearest 0.05% for financial reporting purposes and to the nearest 0.10% to calculate funding limits. The resulting discount rates are:

	December 31, 2019	December 31, 2018
ASC 450-20	1.85%	2.65%
For qualified asset account limit	1.80%	2.60%

Health care cost trend rate assumptions

Health care cost trend is the assumed rate of increase in per capita health care charges. It is disclosed in AEP's financial statements for ASC 715-60 as of December 31, 2019.

Year	Medical	Dental
2020	6.00%	3.00%
2021	5.75%	3.00%
2022	5.50%	3.00%
2023	5.25%	3.00%
2024	5.00%	3.00%
2025	4.75%	3.00%
2026 and after	4.50%	3.00%

AEP uses consistent trend assumptions for postretirement health care and postemployment benefit plan valuations.

Section 3: Participant data

	December 31, 2019	December 31, 2018
Census Date	12/31/2019	12/31/2018
Number		
■ Health care & life insurance continuation benefits for LTD claimants	339	336
■ Income replacement (LTD) plan	332	324
■ COBRA	56	33
Average Age for LTD Medical Continuation Population	59.0	58.5

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Appendix A: Statement of actuarial assumptions and methods

Discount rate

0% for COBRA continuation; for all other benefits

- 1.85% for ASC 712-10 valuation
- 1.80% for tax-deductible funding limit valuation

Health care cost trend rate

(applies to plan costs and participant contributions)

Year	Medical	Dental
2020	6.00%	3.00%
2021	5.75%	3.00%
2022	5.50%	3.00%
2023	5.25%	3.00%
2024	5.00%	3.00%
2025	4.75%	3.00%
2026 and after	4.50%	3.00%

Health Care Benefit Assumptions

Non-UMWA Plans

Average annual 2020 per capita medical claims cost for disabled employees and their dependents

Age	Employee or Spouse		
	HSA Basic	HSA Plus	HRA
≤ 50	\$ 5,583	\$ 6,147	\$ 6,701
50-54	6,855	7,548	8,228
55-59	8,231	9,063	9,879
60-64	10,185	11,215	12,225

Employee age	Children		
	HSA Basic	HSA Plus	HRA
<58	\$ 5,158	\$ 5,766	\$ 6,342
≥58	0	0	0

For employees only, the costs shown above are increased by the following morbidity factors, based on duration of disability

Years Disabled	Employee Medical Cost Multiplier
≤ 3	8.0
3 – 6	5.0
>6	2.0

80% of employees disabled more than 30 months are assumed to be approved for Medicare. Including the Retiree Drug Subsidy under Medicare Part D, the onset of Medicare benefits is assumed to reduce the cost of benefits by 73% for those approved for Medicare.

Average annual 2020 per capita dental claims cost for disabled employees and their dependents

Employee only	\$347
Employee plus spouse	692
Employee plus child(ren)	1,003*
Full family	1,347*

*Children's portion of cost goes to zero at employee's age 58

Administrative expenses

Included in per capita costs shown above.

COBRA morbidity

COBRA participants are assumed to incur average per capita claims costs equal to 154% of costs that active participants incur.

Demographic Assumptions

Healthy Mortality

Base mortality rates are derived from the Pri-2012 mortality table with no collar adjustments.

Mortality improvements are projected forward on a generational basis using an adjusted version of Scale MP-2019. The adjustment reflects 75% of the long-term improvement rates

Long-term disability termination

2012 GLTD table reflecting 6-month elimination period, with margin removed, with the following duration-based adjustments to recovery rates to reflect findings from the 2016 GLTD Experience Study.

- +15% for the first four years of disability
- -10% for later durations

COBRA continuation termination rates for beneficiaries not receiving severance benefits

Months	Probability of Terminating COBRA Coverage at End of Month	
	18-Month Maximum	29- or 36-Month Maximum
1	.17	.05
2	.12	.05
3	.07	.04
4-6	.05	.03
7-12	.04	.03
13	.03	.03
14-24	.03	.02
25-35	N/A	.01
36	N/A	1.00
Average Duration	10.19 months	22.61 months

Social Security benefit entitlement for those not yet approved

Within 36 months of disability, 55% of disabled employees not yet approved for Social Security benefits will be approved for primary Social Security benefits and 20% will be approved for family Social Security benefits

Actuarial Methods

Applicable accounting standards	All benefits have been valued under FASB ASC 450-20-25-2.
Postemployment benefit liability	<p>FASB ASC 450-20-25-2 liabilities are equal to the actuarial present value of future benefit payments to current benefit recipients, with no allowance for incurred but unreported claims or claims administration expenses</p> <p>Calculation of LTD Plan liabilities for disabled participants under IRC Section 419A funding limit valuation includes the following.</p> <ol style="list-style-type: none"> Benefits in payment status – The liability for disabled employees currently receiving benefits is the present value of future benefits expected to be paid Benefits pending or in the waiting period – An estimate is made of the present value of benefits for disabled employees not yet receiving benefit payments For purposes of determining the qualified asset account limit in accordance with Section 419A of the Internal Revenue Code, benefits to be paid to claimants whose disabilities have not lasted more than five months have been excluded from the liabilities described under a) and b) above Claims administrative expenses equal to 12 26% of expected benefit payments
Development of health care benefit claims cost	Cost per participant is based on age-related retired participant costs for AEP non-UMWA plans, adjusted to reflect higher anticipated health care utilization for disabled individuals and reduced for Medicare offsets
Benefits not valued	Claims incurred but not reported (IBNR) have not been included in the FASB ASC 712-10 liabilities for any benefits.

Data Sources

American Electric Power (AEP), through its third-party administrator, furnished participant data as of January 1, 2020. Health plan vendors furnished the claims cost data. Data were reviewed for reasonableness and consistency, but no audit was performed. We are not aware of any errors or omissions in the data that would have a significant effect on the results of our calculations.

Assumptions Rationale — Significant Economic Assumptions – Funding Limit and Accounting

Discount rate (accounting)	As required by U.S. GAAP, the discount rate was chosen by the plan sponsor based on matching projected plan cash flows (for all benefits except COBRA continuation) to U.S. Treasury Constant Maturity yield rates on the measurement date, with resulting discount rate rounded to the nearest 0.05%.
Discount rate (funding limits)	The discount rate was chosen by the plan sponsor based on matching projected LTD income benefit cash flows to the U.S. Treasury Constant Maturity yield rates on the measurement date, with resulting discount rate rounded to nearest 0.10%.
Claims cost trend rates	Assumed increases were chosen by the plan sponsor and, as required by U.S. GAAP, they represent an estimate of future experience, informed by an analysis of recent plan experience, leading to select and ultimate assumed trend rates and reflecting the expected near-term effect of recently enacted plan changes. In setting near-term trend rates, other pertinent statistics were considered, including surveys on general medical cost increases. In setting the ultimate trend rate, considerations included assumed GDP growth consistent with the assumed future

	<p>economic conditions inherent in other economic assumptions chosen by the client at the measurement date</p> <p>After examining historical variability in trend rates, we believe that the selected assumptions do not significantly conflict with what would be reasonable based on a combination of market conditions at the measurement date and future expectations consistent with other economic assumptions used, other than the discount rate.</p>
Participant contribution trend rates	<p>In accordance with the substantive plan communicated to participants, participant contributions are intended to remain a fixed percentage of total plan costs, and thus the trend rates, and the description of the derivation of the trend rates, are the same as for claims costs as shown above</p>
Medicare Part D subsidy trend rates	<p>The assumed rates of increase in Medicare Part D subsidy are assumed to equal the plan's assumed trend rates</p>
Per capita claims costs	<p>Express Scripts and Anthem supplied data on retiree medical claims incurred in 2018 and paid through March 2019. Claim experience rates are calculated for the plans by normalizing claims experience for benefit differences and combining. These normalized incurred claims were then reduced by prescription drug rebates, divided by covered lives and trended forward two years to 2020. Adjustments for plan provision and network changes were also made. Finally, administrative expense rates were added to claims costs.</p> <p>Medical and prescription drug claims cost models are developed by age-grading these claim rates over standard Willis Towers Watson morbidity curves for both medical and prescription drugs to develop the quinquennial age-banded claims cost assumptions.</p> <p>Aetna supplied data on dental claims incurred in 2018 and paid through March 2019. Active employee experience was analyzed to derive the dental claim rates used in this valuation.</p>
Medicare Part D subsidy value	<p>We calibrated our modeling tool to reflect the 2020 cost of the current prescription drug plans for AEP's disabled employees. The tool employs a continuance table of annual retiree drug utilization levels, developed from analyzing 2016 claim experience of 1.8 million Medicare-eligible participants across several large companies.</p> <p>After the plan-specific benefit provisions have been calibrated to current costs, the Modeler trends costs forward to 2020 at 7% per year. Actuarial equivalence was determined using the following approach.</p> <p><i>Gross Value Test</i> — The Modeler calculates the value of standard Medicare Part D coverage and compares it to AEP's plan costs. AEP's plans passed this test by being richer than the projected value of standard Medicare part D coverage for these groups.</p> <p><i>Net Value Test</i> — The net value prong of the test compares the value of Standard Part D coverage in 2020 minus the greater of \$392.88 per year (the national average Part D premium) and 25% of the gross value of Part D to the projected 2020 value of AEP coverage minus the average projected 2020 retiree contribution rate. For this purpose, employee contributions were assumed to apply first to the value of medical benefits and then to prescription drug benefits.</p> <p>When the plans are deemed to be actuarially equivalent, the tool calculates the average expected value of the employer subsidy in 2020, using the continuance table calibrated to AEP's plan costs.</p>

Assumptions Rationale — Significant Demographic Assumptions

Healthy Mortality	Assumptions were selected by the plan sponsor and, as required by U S GAAP, represent a best estimate of future experience.
Disabled Mortality	Assumptions were selected by the plan sponsor and, as required by U S GAAP, represent a best estimate of future experience
Rates of disability termination (recovery or death)	<p>Termination rates reflecting both recovery and death were based on a published table for disabled participants believed to have similar characteristics to the plan population—the 2012 Group Long-Term Disability (GLTD) table, reflecting experience from the 2016 GLTD Experience Study</p> <p>Assumed termination rates differ by age, gender and duration because of differences in termination rates by gender and duration observed in studies of disability termination rates conducted by the Society of Actuaries</p>

Source of Prescribed Methods

Accounting methods	The methods used for accounting purposes as described in Appendix A are "prescribed methods set by another party," as defined in the actuarial standards of practice (ASOPs) As required by U S GAAP, these methods were selected by the plan sponsor.
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Changes in Assumptions and Methods

Change in assumptions since prior valuation	<p>Per capita claims costs were updated to reflect 2018 dental and retiree medical claims experience.</p> <p>Discount rate was changed from 2.65% to 1.85% for financial reporting purposes and from 2.60% to 1.80% for determining tax funding limits</p> <p>Healthy mortality was changed to Pri-2012 mortality table</p> <p>Medical trend rates were changed to continue the current schedule, but further phasing down to an ultimate rate of 4.50% in 2026</p>
Change in methods since prior valuation	None.

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Appendix B: Summary of substantive plan provisions reflected in valuation

Non-UMWA Plans

Long-Term Disability

Eligibility	Total disability following elimination period of 26 weeks
Benefits	<p>Following 26 weeks of total disability, benefits are payable. Benefit payments continue until the first to occur of the following.</p> <ul style="list-style-type: none"> (i) The participant ceases to be totally disabled, or (ii) He reaches age 65 or if he becomes disabled after age 60, benefits can extend beyond age 65. <p>Monthly benefits equal 60% (or 70% with employee buy-up) of base monthly salary reduced by</p> <ul style="list-style-type: none"> (a) Initial Social Security benefit (primary portion only for pre-2001 West disabilities) (b) Workers Compensation benefit (c) Jones Act (d) General Maritime Law (e) Settlements (f) Other plans

Health Care Continuation to LTD Claimants

Eligibility	Participants are eligible for health care continuation upon approval for LTD benefits. Dependents of disabled employees are also eligible. Benefits continue until LTD benefits cease due to death, recovery or retirement.
Benefits	Eligible participants receive continued coverage under AEP's active employee medical and dental plans. Disabled participants who are eligible for Medicare have medical benefits provided secondary to Medicare.

Contributions (Annual) Effective January 1, 2020

	HSA Basic	HSA Plus	HRA	Dental
Employee only	\$426	\$1,108	\$1,753	\$145
Employee plus spouse	1,211	2,837	4,376	288
Employee plus child(ren)	932	2,222	3,443	414
Full family	1,717	3,951	6,066	559

Life Insurance Continuation to LTD Claimants

Eligibility	Participants are eligible for life insurance continuation upon approval for LTD benefits.
Benefits	Eligible participants receive continued coverage under the active employee life insurance plans. Basic and supplemental amounts in force prior to approval for LTD benefits are continued. Dependent life insurance is also continued but has not been valued.

Contributions	Same rates payable by active employees for supplemental coverage
COBRA	When employees terminate, they are offered medical coverage for 18 months at COBRA rates (102% of average active/pre-65 retiree medical costs). Because anti-selection occurs, the average cost for participants who elect COBRA coverage is typically more than the COBRA rates they pay to enroll for coverage. Surviving spouses may continue coverage at COBRA rates for up to 36 months.

Changes in Benefits Valued Since Prior Year

None.

Appendix C: Results by business unit

American Electric Power
Health Care and Life Insurance for Employees on Long-Term Disability
Liabilities as of December 31, 2019

ML-1

Code Location	Number Disabled	Medical Benefits		Basic Life Insurance		Supplemental Life Insurance		Dental Benefits		All Benefits	
		2020 Projected Liability	2020 Projected Benefit Payments	2020 Projected Liability	2020 Projected Benefit Payments	2020 Projected Liability	2020 Projected Benefit Payments	2020 Projected Liability	2020 Projected Benefit Payments	2020 Projected Liability	2020 Projected Benefit Payments
140 Appalachian Power Co - Distribution	46	\$4,056,400	\$1,526,351	\$1,002,786	\$368,227	\$1,002,202	\$365,727	\$54,126	\$12,999	\$6,175,514	\$2,273,303
215 Appalachian Power Co - Generation	26	1,964,470	562,620	504,343	149,962	304,338	89,488	36,992	9,172	2,810,143	828,240
150 Appalachian Power Co - Transmission	3	211,027	36,436	24,879	5,618	23,870	4,105	4,628	985	264,603	47,147
Appalachian Power Co - FERC	75	\$6,231,897	\$2,145,406	\$1,592,007	\$523,807	\$1,330,410	\$456,317	\$95,846	\$23,160	\$9,250,260	\$3,146,691
229 Cedar Coal Co	0	0	0	0	0	0	0	0	0	0	0
Appalachian Power Co - SEC	75	\$6,231,897	\$2,145,406	\$1,592,007	\$523,807	\$1,330,410	\$456,317	\$95,846	\$23,160	\$9,250,260	\$3,146,691
211 AEP Texas Central Company - Distribution	22	\$1,868,012	\$665,057	\$499,034	\$154,535	\$791,569	\$245,213	\$27,783	\$6,903	\$3,186,398	\$1,071,708
147 AEP Texas Central Company - Generation	0	0	0	0	0	0	0	0	0	0	0
189 AEP Texas Central Company - Transmission	0	0	0	0	0	0	0	0	0	0	0
AEP Texas Central Co.	22	\$1,868,012	\$665,057	\$499,034	\$154,535	\$791,569	\$245,213	\$27,783	\$6,903	\$3,186,398	\$1,071,708
170 Indiana Michigan Power Co - Distribution	6	\$323,061	\$126,342	\$112,238	\$34,718	\$70,449	\$16,932	\$4,507	\$1,001	\$510,295	\$178,994
132 Indiana Michigan Power Co - Generation	3	175,606	45,411	53,752	10,426	14,102	2,829	3,676	816	247,136	59,482
190 Indiana Michigan Power Co - Nuclear	2	307,505	46,963	96,043	13,883	81,713	12,577	6,907	799	492,246	73,901
120 Indiana Michigan Power Co - Transmission	2	139,465	44,165	27,671	6,007	0	0	3,056	613	170,172	83,065
280 Ind Mich River Transp Laken	12	1,090,120	318,995	244,286	54,958	364,071	92,918	20,205	3,140	1,712,682	470,010
Indiana Michigan Power Co - FERC	28	\$2,055,757	\$581,576	\$533,880	\$122,051	\$630,336	\$125,256	\$38,411	\$6,569	\$3,138,493	\$935,481
202 Price River Coal	0	0	0	0	0	0	0	0	0	0	0
Indiana Michigan Power Co - SEC	28	\$2,055,757	\$581,576	\$533,880	\$122,051	\$630,336	\$125,256	\$38,411	\$6,569	\$3,138,493	\$935,481
110 Kentucky Power Co - Distribution	12	\$1,257,410	\$529,682	\$273,067	\$103,141	\$442,392	\$179,999	\$18,731	\$4,659	\$1,901,600	\$817,482
117 Kentucky Power Co - Generation	6	621,061	145,160	133,314	35,122	203,121	56,146	11,169	2,165	969,586	238,622
180 Kentucky Power Co - Transmission	0	0	0	0	0	0	0	0	0	0	0
800 Kentucky Power Co - Kammer Activies	3	190,264	28,582	71,369	11,790	63,030	7,461	4,812	615	339,475	48,648
701 Kentucky Power Co - Michell Activies	2	196,656	26,174	57,866	9,300	43,565	5,863	5,841	1,201	305,927	42,568
702 Kentucky Power Co - Michell Inactives	0	0	0	0	0	0	0	0	0	0	0
Kentucky Power Co.	23	\$2,277,230	\$728,898	\$635,616	\$159,382	\$762,108	\$248,498	\$40,553	\$8,770	\$3,605,567	\$1,147,350
250 Ohio Power Co - Distribution	33	\$3,106,392	\$1,150,775	\$672,178	\$220,261	\$667,265	\$179,670	\$58,378	\$11,537	\$4,504,213	\$1,571,244
160 Ohio Power Co - Transmission	2	128,533	13,609	46,321	5,720	26,291	3,675	2,888	406	206,033	23,413
Ohio Power Co.	35	\$3,234,925	\$1,173,384	\$718,499	\$225,981	\$693,556	\$183,345	\$61,266	\$11,943	\$4,710,246	\$1,594,656
167 Public Service Co of Oklahoma - Distribution	10	\$855,189	\$204,319	\$201,667	\$42,023	\$160,592	\$35,531	\$26,413	\$3,702	\$1,243,861	\$285,575
198 Public Service Co of Oklahoma - Generation	6	698,428	308,919	146,067	51,943	224,283	94,403	7,975	1,850	1,078,753	457,115
114 Public Service Co of Oklahoma - Transmission	1	227,766	50,897	32,880	6,010	106,108	20,630	6,048	679	372,802	78,217
Public Service Co of Oklahoma	17	\$1,781,383	\$564,135	\$380,614	\$99,976	\$486,983	\$150,564	\$40,436	\$5,231	\$2,693,416	\$820,907
159 Southwestern Electric Power Co - Distribution	12	\$1,619,992	\$611,594	\$354,894	\$115,812	\$406,026	\$132,592	\$21,987	\$4,253	\$2,402,899	\$964,241
168 Southwestern Electric Power Co - Generation	11	1,178,131	414,458	247,977	69,249	252,028	74,648	17,572	3,592	1,695,708	561,947
161 Southwestern Electric Power Co - Texas - Distribution	10	1,112,412	416,369	233,177	82,306	389,879	128,385	18,555	3,997	1,754,063	631,059
111 Southwestern Electric Power Co - Texas - Transmission	0	0	0	0	0	0	0	0	0	0	0
194 Southwestern Electric Power Co - Transmission	0	0	0	0	0	0	0	0	0	0	0
Southwestern Electric Power Co	23	\$3,910,535	\$1,442,412	\$938,048	\$267,369	\$1,047,933	\$335,625	\$58,154	\$11,842	\$5,852,672	\$2,097,247
119 AEP Texas North Company - Distribution	4	\$372,608	\$136,594	\$94,824	\$26,061	\$62,769	\$23,887	\$5,614	\$1,401	\$535,912	\$186,933
168 AEP Texas North Company - Generation	0	0	0	0	0	0	0	0	0	0	0
192 AEP Texas North Company - Transmission	0	0	0	0	0	0	0	0	0	0	0
AEP Texas North Co	4	\$372,608	\$136,594	\$94,824	\$26,061	\$62,769	\$23,887	\$5,614	\$1,401	\$535,912	\$186,933
230 Kingsport Power Co - Distribution	1	\$0	\$0	\$37,257	\$4,829	\$127,322	\$17,067	\$0	\$0	\$164,579	\$21,886
260 Kingsport Power Co - Transmission	0	0	0	0	0	0	0	0	0	0	0
Kingsport Power Co.	1	\$0	\$0	\$37,257	\$4,829	\$127,322	\$17,067	\$0	\$0	\$164,579	\$21,886
210 Wheeling Power Co - Distribution	1	\$203,174	\$97,217	\$33,649	\$15,961	\$0	\$0	\$1,275	\$382	\$238,096	\$113,560
200 Wheeling Power Co - Transmission	0	0	0	0	0	0	0	0	0	0	0
Wheeling Power Co.	1	\$203,174	\$97,217	\$33,649	\$15,961	\$0	\$0	\$1,275	\$382	\$238,096	\$113,560
103 American Electric Power Service Corporation	61	\$5,632,723	\$2,068,096	\$1,497,251	\$487,840	\$1,347,048	\$427,823	\$78,470	\$16,736	\$8,555,492	\$3,000,466
268 Elmwood	0	0	0	0	0	0	0	0	0	0	0
292 AEP River Operations LLC	8	\$90,495	79,909	\$201,888	\$2,179	\$172,996	\$8,550	\$9,581	\$3,205	\$84,960	\$17,843
American Electric Power Service Corp	69	\$6,223,218	\$2,147,974	\$1,699,139	\$530,019	\$1,520,044	\$474,374	\$98,051	\$19,941	\$9,540,452	\$3,172,309
143 AEP Pro Serv, Inc	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
189 Central Coal Company	0	0	0	0	0	0	0	0	0	0	0
171 CSW Energy, Inc	0	0	0	0	0	0	0	0	0	0	0
Miscellaneous	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
270 Cook Coal Terminal	0	0	0	0	0	0	0	0	0	0	0
AEP Generating Company	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
104 Cardinal Operating Company	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
181 Ohio Power Co - Generation	9	\$463,738	\$87,279	\$115,814	\$27,314	\$72,385	\$18,881	\$15,114	\$2,606	\$687,051	\$137,080
AEP Generation Resources - FERC	9	\$463,738	\$87,279	\$115,814	\$27,314	\$72,385	\$18,881	\$15,114	\$2,606	\$687,051	\$137,080
250 Conesville Coal Preparation Company	0	0	0	0	0	0	0	0	0	0	0
AEP Generation Resources - SEC	9	\$463,738	\$87,279	\$115,814	\$27,314	\$72,385	\$18,881	\$15,114	\$2,606	\$687,051	\$137,080
175 AEP Energy Partners	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
419 Ohio Partners	0	0	0	0	0	0	0	0	0	0	0
AEP Energy Supply	9	\$463,738	\$87,279	\$115,814	\$27,314	\$72,385	\$18,881	\$15,114	\$2,606	\$687,051	\$137,080
245 Dolel Hills	25	\$2,857,454	\$1,099,148	\$806,095	\$202,526	\$289,962	\$98,477	\$48,734	\$6,555	\$3,802,245	\$1,406,706
Dolel Hills	25	\$2,857,454	\$1,099,148	\$806,095	\$202,526	\$289,962	\$98,477	\$48,734	\$6,555	\$3,802,245	\$1,406,706
Total	339	\$31,458,989	\$10,868,779	\$7,692,686	\$2,359,802	\$7,711,376	\$2,370,606	\$531,337	\$108,407	\$47,395,387	\$15,716,492

American Electric Power
Long-Term Disability Income Replacement Benefits
Liabilities as of December 31, 2019

ML-2

Code Location	Number Disabled	12/31/2019 Liability	Total LTD Assets as of 12/31/2019	12/31/2019 Unfunded Liability	2020 Projected Benefit Payments
140 Appalachian Power Co - Distribution	44	\$3,236,621	\$401,151	\$2,835,470	\$836,881
215 Appalachian Power Co - Generation	26	1,506,933	186,771	1,320,162	387,053
150 Appalachian Power Co - Transmission	3	139,057	17,235	121,822	29,429
Appalachian Power Co. - FERC	73	\$4,882,611	\$605,157	\$4,277,454	\$1,253,363
225 Cedar Coal Co	0	\$0	\$0	\$0	\$0
Appalachian Power Co. - SEC	73	\$4,882,611	\$605,157	\$4,277,454	\$1,253,363
211 AEP Texas Central Company - Distribution	22	\$1,690,152	\$209,480	\$1,480,672	\$458,471
147 AEP Texas Central Company - Generation	0	0	0	0	0
169 AEP Texas Central Company - Transmission	0	0	0	0	0
AEP Texas Central Co.	22	\$1,690,152	\$209,480	\$1,480,672	\$458,471
170 Indiana Michigan Power Co - Distribution	6	\$266,391	\$33,017	\$233,374	\$67,913
132 Indiana Michigan Power Co - Generation	3	147,559	18,289	129,270	30,752
190 Indiana Michigan Power Co - Nuclear	2	594,361	73,666	520,695	79,665
120 Indiana Michigan Power Co. - Transmission	2	85,605	10,610	74,995	24,855
280 Ind Mich River Transp Ltn	12	1,000,615	124,018	876,597	189,254
Indiana Michigan Power Co. - FERC	25	\$2,094,531	\$259,600	\$1,834,931	\$392,539
202 Price River Coal	0	\$0	\$0	\$0	\$0
Indiana Michigan Power Co. - SEC	25	\$2,094,531	\$259,600	\$1,834,931	\$392,539
110 Kentucky Power Co - Distribution	12	\$866,271	\$107,367	\$758,904	\$238,973
117 Kentucky Power Co. - Generation	5	360,158	45,754	314,404	76,754
180 Kentucky Power Co - Transmission	0	0	0	0	0
600 Kentucky Power Co. - Kammer Actives	3	141,903	17,588	124,315	21,800
701 Kentucky Power Co - Mitchell Actives	2	327,716	40,618	287,098	49,444
702 Kentucky Power Co. - Mitchell Inactives	0	0	0	0	0
Kentucky Power Co.	22	\$1,705,048	\$211,327	\$1,493,721	\$386,972
250 Ohio Power Co - Distribution	32	\$2,060,325	\$255,360	\$1,804,965	\$467,295
160 Ohio Power Co - Transmission	2	152,487	18,899	133,588	23,461
Ohio Power Co.	34	\$2,212,812	\$274,259	\$1,938,553	\$490,756
167 Public Service Co of Oklahoma - Distribution	10	\$940,295	\$116,541	\$823,754	\$158,100
198 Public Service Co of Oklahoma - Generation	6	430,296	53,331	376,965	109,656
114 Public Service Co of Oklahoma - Transmission	1	241,591	29,943	211,648	32,136
Public Service Co of Oklahoma	17	\$1,612,182	\$199,815	\$1,412,367	\$299,892
159 Southwestern Electric Power Co - Distribution	12	\$1,110,296	\$137,612	\$972,684	\$221,960
168 Southwestern Electric Power Co. - Generation	11	760,839	94,299	666,540	178,252
161 Southwestern Electric Power Co - Texas - Distribution	10	729,154	90,372	638,782	199,198
111 Southwestern Electric Power Co - Texas - Transmission	0	0	0	0	0
194 Southwestern Electric Power Co - Transmission	0	0	0	0	0
Southwestern Electric Power Co.	33	\$2,600,289	\$322,283	\$2,278,006	\$587,409
119 AEP Texas North Company - Distribution	4	\$227,583	\$28,207	\$199,376	\$60,561
166 AEP Texas North Company - Generation	0	0	0	0	0
192 AEP Texas North Company - Transmission	0	0	0	0	0
AEP Texas North Co.	4	\$227,583	\$28,207	\$199,376	\$60,561
230 Kingsport Power Co - Distribution	1	\$107,843	\$13,366	\$94,477	\$14,279
260 Kingsport Power Co - Transmission	0	0	0	0	0
Kingsport Power Co.	1	\$107,843	\$13,366	\$94,477	\$14,279
210 Wheeling Power Co - Distribution	1	\$33,961	\$4,209	\$29,752	\$10,566
200 Wheeling Power Co - Transmission	0	0	0	0	0
Wheeling Power Co.	1	\$33,961	\$4,209	\$29,752	\$10,566
103 American Electric Power Service Corporation	61	\$5,087,865	\$630,597	\$4,457,268	\$1,258,408
293 Elmwood	0	0	0	0	0
292 AEP River Operations LLC	8	1,001,736	124,157	877,579	201,780
American Electric Power Service Corp	69	\$6,089,601	\$754,754	\$5,334,847	\$1,460,188
143 AEP Pro Serv, Inc	0	\$0	\$0	\$0	\$0
189 Central Coal Company	0	0	0	0	0
171 CSW Energy, Inc	0	0	0	0	0
Miscellaneous	0	\$0	\$0	\$0	\$0
270 Cook Coal Terminal	0	\$0	\$0	\$0	\$0
AEP Generating Company	0	\$0	\$0	\$0	\$0
104 Cardinal Operating Company	0	\$0	\$0	\$0	\$0
181 Ohio Power Co. - Generation	9	416,997	51,683	365,314	104,738
AEP Generation Resources - FERC	9	\$416,997	\$51,683	\$365,314	\$104,738
290 Conesville Coal Preparation Company	0	\$0	\$0	\$0	\$0
AEP Generation Resources - SEC	0	\$0	\$0	\$0	\$0
175 AEP Energy Partners	0	\$0	\$0	\$0	\$0
419 Onsite Partners	0	0	0	0	0
AEP Energy Supply	0	\$0	\$0	\$0	\$0
245 Dolet Hills	22	\$1,451,159	\$179,859	\$1,271,300	\$334,099
Dolet Hills	22	\$1,451,159	\$179,859	\$1,271,300	\$334,099
Total	332	\$25,124,769	\$3,113,999	\$22,010,770	\$5,883,332

American Electric Power Postemployment Benefit Plan

American Electric Power
Liabilities for COBRA Continuation of Medical and Dental Coverage
Former Non-UMWA and UMWA Employees

ML-3

Code	Location	Number of Participants	12/31/2019 Liability	2020 Projected Benefit Payments
140	Appalachian Power Co - Distribution	2	\$7,552	\$7,552
215	Appalachian Power Co - Generation	0	0	0
150	Appalachian Power Co - Transmission	0	0	0
	Appalachian Power Co. - FERC	2	\$7,552	\$7,552
225	Cedar Coal Co	0	0	0
	Appalachian Power Co. - SEC	2	\$7,552	\$7,552
211	AEP Texas Central Company - Distribution	2	\$10,517	\$10,517
147	AEP Texas Central Company - Generation	0	0	0
169	AEP Texas Central Company - Transmission	0	0	0
	AEP Texas Central Co.	2	\$10,517	\$10,517
170	Indiana Michigan Power Co - Distribution	0	\$0	\$0
132	Indiana Michigan Power Co - Generation	0	0	0
190	Indiana Michigan Power Co - Nuclear	9	43,441	39,235
120	Indiana Michigan Power Co - Transmission	0	0	0
280	Ind Mich River Transp Lakin	0	0	0
	Indiana Michigan Power Co. - FERC	9	\$43,441	\$39,235
202	Price River Coal	0	0	0
	Indiana Michigan Power Co. - SEC	9	\$43,441	\$39,235
110	Kentucky Power Co - Distribution	0	\$0	\$0
117	Kentucky Power Co - Generation	0	0	0
180	Kentucky Power Co - Transmission	0	0	0
600	Kentucky Power Co - Kammer Actives	0	0	0
701	Kentucky Power Co - Mitchell Actives	0	0	0
702	Kentucky Power Co - Mitchell Inactives	0	0	0
	Kentucky Power Co.	0	\$0	\$0
250	Ohio Power Co - Distribution	0	\$0	\$0
160	Ohio Power Co - Transmission	0	0	0
	Ohio Power Co.	0	\$0	\$0
167	Public Service Co of Oklahoma - Distribution	4	\$26,082	\$23,220
198	Public Service Co of Oklahoma - Generation	0	0	0
114	Public Service Co of Oklahoma - Transmission	0	0	0
	Public Service Co. of Oklahoma	4	\$26,082	\$23,220
159	Southwestern Electric Power Co - Distribution	1	\$7,050	\$3,881
168	Southwestern Electric Power Co - Generation	0	0	0
161	Southwestern Electric Power Co - Texas - Distribution	0	0	0
111	Southwestern Electric Power Co - Texas - Transmission	0	0	0
194	Southwestern Electric Power Co - Transmission	0	0	0
	Southwestern Electric Power Co.	1	\$7,050	\$3,881
119	AEP Texas North Company - Distribution	0	\$0	\$0
166	AEP Texas North Company - Generation	0	0	0
192	AEP Texas North Company - Transmission	0	0	0
	AEP Texas North Co.	0	\$0	\$0
230	Kingsport Power Co - Distribution	0	\$0	\$0
260	Kingsport Power Co - Transmission	0	0	0
	Kingsport Power Co.	0	\$0	\$0
210	Wheeling Power Co - Distribution	0	\$0	\$0
200	Wheeling Power Co - Transmission	0	0	0
	Wheeling Power Co.	0	\$0	\$0
103	American Electric Power Service Corporation	30	\$139,994	\$111,751
293	Elmwood	0	0	0
292	AEP River Operations LLC	0	0	0
	American Electric Power Service Corp	30	\$139,994	\$111,751
143	AEP Pro Serv, Inc	0	\$0	\$0
189	Central Coal Company	0	0	0
171	CSW Energy, Inc	0	0	0
	Miscellaneous	0	\$0	\$0
270	Cook Coal Terminal	0	0	0
	AEP Generating Company	0	\$0	\$0
104	Cardinal Operating Company	0	\$0	\$0
181	Ohio Power Co - Generation	2	10,256	7,956
	AEP Generation Resources - FERC	2	\$10,256	\$7,956
290	Conesville Coal Preparation Company	0	0	0
	AEP Generation Resources - SEC	2	\$10,256	\$7,956
175	AEP Energy Partners	0	0	0
419	Onsite Partners	0	0	0
	AEP Energy Supply	2	\$10,256	\$7,956
245	Dolet Hills	6	\$42,901	\$37,600
	Dolet Hills	6	\$42,901	\$37,600
	Total	66	\$287,803	\$241,712

American Electric Power
Benefits Summary by Location
Unfunded Liabilities as of December 31, 2019

ML-4

Code	Location	Health Care and Life Insurance	LTD	COBRA	Total Benefits
140	Appalachian Power Co - Distribution	\$6,175,514	\$2,835,470	\$7,552	\$9,018,536
215	Appalachian Power Co - Generation	2,810,143	1,320,162	0	4,130,305
150	Appalachian Power Co - Transmission	264,603	121,822	0	386,425
	Appalachian Power Co. - FERC	\$9,250,260	\$4,277,454	\$7,552	\$13,535,266
225	Cedar Coal Co	0	0	0	0
	Appalachian Power Co. - SEC	\$9,250,260	\$4,277,454	\$7,552	\$13,535,266
211	AEP Texas Central Company - Distribution	\$3,186,398	\$1,480,872	\$10,517	\$4,677,587
147	AEP Texas Central Company - Generation	0	0	0	0
169	AEP Texas Central Company - Transmission	0	0	0	0
	AEP Texas Central Co.	\$3,186,398	\$1,480,872	\$10,517	\$4,677,587
170	Indiana Michigan Power Co - Distribution	\$510,255	\$233,374	\$0	\$743,629
132	Indiana Michigan Power Co - Generation	247,136	129,270	0	376,406
190	Indiana Michigan Power Co - Nuclear	492,248	520,695	43,441	1,056,384
120	Indiana Michigan Power Co - Transmission	170,172	74,995	0	245,167
280	Ind Mich River Transp Lakin	1,718,682	876,597	0	2,595,279
	Indiana Michigan Power Co. - FERC	\$3,138,493	\$1,834,931	\$43,441	\$5,016,865
202	Price River Coal	0	0	0	0
	Indiana Michigan Power Co. - SEC	\$3,138,493	\$1,834,931	\$43,441	\$5,016,865
110	Kentucky Power Co - Distribution	\$1,991,600	\$758,904	\$0	\$2,750,504
117	Kentucky Power Co - Generation	969,585	323,404	0	1,292,989
180	Kentucky Power Co - Transmission	0	0	0	0
600	Kentucky Power Co - Kammer Actives	338,475	124,315	0	462,790
701	Kentucky Power Co - Mitchell Actives	305,927	287,098	0	593,025
702	Kentucky Power Co - Mitchell Inactives	0	0	0	0
	Kentucky Power Co.	\$3,605,567	\$1,493,721	\$0	\$5,099,288
250	Ohio Power Co - Distribution	\$4,504,213	\$1,804,965	\$0	\$6,309,178
160	Ohio Power Co - Transmission	206,033	133,588	0	339,621
	Ohio Power Co.	\$4,710,246	\$1,938,553	\$0	\$6,648,799
167	Public Service Co. of Oklahoma - Distribution	\$1,243,861	\$823,754	\$26,092	\$2,093,707
198	Public Service Co. of Oklahoma - Generation	1,076,753	376,965	0	1,453,718
114	Public Service Co. of Oklahoma - Transmission	372,802	211,648	0	584,450
	Public Service Co. of Oklahoma	\$2,693,416	\$1,412,367	\$26,092	\$4,131,875
159	Southwestern Electric Power Co - Distribution	\$2,402,899	\$972,684	\$7,050	\$3,382,633
168	Southwestern Electric Power Co - Generation	1,695,708	666,540	0	2,362,248
161	Southwestern Electric Power Co - Texas - Distribution	1,754,063	638,782	0	2,392,845
111	Southwestern Electric Power Co - Texas - Transmission	0	0	0	0
194	Southwestern Electric Power Co - Transmission	0	0	0	0
	Southwestern Electric Power Co.	\$5,852,670	\$2,278,006	\$7,050	\$8,137,726
119	AEP Texas North Company - Distribution	\$535,912	\$199,376	\$0	\$735,288
166	AEP Texas North Company - Generation	0	0	0	0
192	AEP Texas North Company - Transmission	0	0	0	0
	AEP Texas North Co.	\$535,912	\$199,376	\$0	\$735,288
230	Kingsport Power Co - Distribution	\$164,579	\$94,477	\$0	\$259,056
260	Kingsport Power Co - Transmission	0	0	0	0
	Kingsport Power Co.	\$164,579	\$94,477	\$0	\$259,056
210	Wheeling Power Co - Distribution	\$238,098	\$29,752	\$0	\$267,850
200	Wheeling Power Co - Transmission	0	0	0	0
	Wheeling Power Co.	\$238,098	\$29,752	\$0	\$267,850
103	American Electric Power Service Corporation	\$8,555,492	\$4,457,268	\$139,994	\$13,152,754
293	Elmwood	0	0	0	0
292	AEP River Operations LLC	964,960	877,579	0	1,862,539
	American Electric Power Service Corp	\$9,540,452	\$5,334,847	\$139,994	\$15,015,293
143	AEP Pro Serv, Inc	\$0	\$0	\$0	\$0
189	Central Coal Company	0	0	0	0
171	CSW Energy, Inc	0	0	0	0
	Miscellaneous	\$0	\$0	\$0	\$0
270	Cook Coal Terminal	\$0	\$0	\$0	\$0
	AEP Generating Company	\$0	\$0	\$0	\$0
104	Cardinal Operating Company	\$0	\$0	\$0	\$0
181	Ohio Power Co - Generation	667,051	365,314	10,256	1,042,621
	AEP Generation Resources - FERC	\$667,051	\$365,314	\$10,256	\$1,042,621
290	Conesville Coal Preparation Company	0	0	0	0
	AEP Generation Resources - SEC	\$667,051	\$365,314	\$10,256	\$1,042,621
175	AEP Energy Partners	0	0	0	0
419	Onsite Partners	0	0	0	0
	AEP Energy Supply	\$667,051	\$365,314	\$10,256	\$1,042,621
245	Dolet Hills	\$3,802,245	\$1,271,300	\$42,901	\$5,116,446
	Dolet Hills	\$3,802,245	\$1,271,300	\$42,901	\$5,116,446
	Total	\$47,385,387	\$22,010,770	\$287,803	\$69,683,960

Southwestern Electric Power Company
Dolet Hills Recommendation

			Depreciation											
Description	Utility Account	Month	Gross Plant	Accum Depr	Allocated CWIP	Gross Plant + Allocated CWIP	Depreciation Rates	July 2020 - Mar-21	Total Company Net Book	Texas Net Book	Total Company Depreciation	Texas Net Book		
Dolet Hills Plant	31100 - Structures, Improvemnt-Coal	06/2020	57,127,514	51,966,358	686,515	57,814,029	2 00%	867,210	4,293,946	1,586,330	528,106	195,100 28		
Dolet Hills Plant	31200 - Boiler Plant Equip-Coal	06/2020	211,216,144	139,942,797	2,538,234	213,754,378	2 36%	3,783,452	67,489,895	24,933,071	8,300,477	3,066,479 62		
Dolet Hills Plant	31400 - Turbogenerator Units-Coal	06/2020	39,735,805	33,443,811	477,515	40,213,320	2 13%	642,408	5,649,586	2,087,150	694,834	256,695 35		
Dolet Hills Plant	31500 - Accessory Elect Equip-Coal	06/2020	12,575,554	10,578,211	151,123	12,726,678	2 10%	200,445	1,796,898	663,836	220,998	81,644 10		
Dolet Hills Plant	31600 - Misc Pwr Plant Equip-Coal	06/2020	16,666,082	13,644,739	200,280	16,866,362	2 39%	302,330	2,719,013	1,004,496	334,407	123,541 45		
Dolet Hills Plant	31700 - ARO Steam Production Plant	06/2020	1,257,350	548,720	-	1,257,350	37 57%	354,315	354,315	130,896	43,577	16,098 71		
Dolet Hills Plant	31700 - ARO Steam Production Plant	06/2020	(26,693)	(1,937)	-	(26,693)	61 83%	(12,378)	(12,378)	(4,573)	(1,522)	(562 41)		
			338,551,758	250,122,699	4,053,667	342,605,425			82,291,276	30,401,206	10,120,876	3,738,997		
				CWIP	4,053,667									
								Account 1080161	29,763,258	10,995,563				
								Demo Estimate	10,740,383	3,967,864				
								Total Dolet NBV	122,794,917	45,364,633				
								Excess ADIT Off-Set	(82,311,412)	(30,408,645)				
								Remaining Value	40,483,505	14,955,988				
								4 Year Amortization	10,120,876	3,738,997				

Southwestern Electric Power Company
Effect of Additional Qualified Pension Contributions Recorded As Prepaid Pension Asset in Reducing Qualified Pension Cost

(1)	(2)	(3)	(4)	(5) [= (4) * Prior (6)]	(6) [= (2) + (3) + (5) + Prior (6)]
Contribution	Less Qualified FAS 87 Cost		Investment Return Rate	Amount	Cumulative Balance
FAS 87 Savings					
2005 Prepaid Pension Balance	57,502,614	-			57,502,614
2006 Return on 2005 Balance			8 50%	4,887,722	62,390,336
2006 Contributions	-	4,791,475			57,598,861
2007 Return on 2006 Balance			8 50%	5,303,179	62,902,040
2007 Contributions	-	2,905,580			59,996,460
2008 Return on 2007 Balance			8 00%	5,032,163	65,028,623
2008 Contributions	-	3,663,168			61,365,455
2009 Return on 2008 Balance			8 00%	5,202,290	66,567,745
2009 Contributions	-	4,738,640			61,829,105
2010 Return on 2009 Balance			8 00%	5,325,420	67,154,525
2010 Contributions	29,065,468	7,009,908			89,210,085
2011 Return on 2010 Balance			7 75%	6,913,782	96,123,866
2011 Contributions	31,263,000	7,391,000			119,995,866
2012 Return on 2011 Balance			7 25%	8,699,700	128,695,567
2012 Contributions	13,192,000	8,211,415			133,676,152
2013 Return on 2012 Balance			6 50%	8,688,950	142,365,102
2013 Contributions	-	12,422,427			129,942,674
2014 Return on 2013 Balance			6 00%	7,796,560	137,739,235
2014 Contributions	3,832,000	11,085,101			130,486,134
2015 Return on 2014 Balance			6 00%	7,829,168	138,315,302
2015 Contributions	8,052,000	10,200,016			136,167,286
2016 Return on 2015 Balance			6 00%	8,170,037	144,337,323
2016 Contributions	8,342,000	9,058,916			143,620,407
2017 Return on 2016 Balance			6 00%	8,617,224	152,237,631
2017 Contributions	8,890,000	8,858,583			152,269,048
2018 Return on 2017 Balance			6 00%	9,136,143	161,405,191
2018 Contributions	-	8,115,758			153,289,433
2019 Return on 2018 Balance			6 25%	9,580,590	162,870,023
2019 Contributions	-	6,594,340			156,275,683
Total Additional Contributions Above	<u>142,907,082</u>	<u>72,418,730</u>			
Prepaid Pension Balance at December 31, 2019	80,920,395				

	2020
Actual Pension Cost	9,999,361
Prepaid Contribution Savings Above	<u>9,580,590</u>
Pension Cost Without Contribution Savings	<u>19,579,951</u>

AEP Travel and Entertainment Policy Guide

Last revised: January, 2011.

- Purpose
- Responsibilities
- Corporate Charge Card
- General Travel Arrangements
- Air Transportation
- Rail Transportation
- Ground Transportation
- Lodging
- Telephone Charges
- Business Meals
- Laundry Service
- Business Entertainment
- Per Diem Allowances
- Spouse/Family Expenses as Authorized Business Expenses
- Travel Club Memberships
- Non-Reimbursable Expenses
- Personal Business
- Group and Meeting Travel
- Miscellaneous
- Documentation
- Travel and Entertainment Forms

Policy Guide - Purpose

AEP's Travel and Entertainment (T&E) Policy is to provide employees (authorized to travel on the Company's behalf) with reasonable transportation, lodging, meals, and other services necessary to conduct official business. This policy applies only to travel and entertainment expenses. The Company's policy is also to reimburse employees for all reasonable expenses they incur on business in a timely manner.

Since every situation encountered while traveling on business cannot be anticipated, each employee shall exercise good judgment and fiscal responsibility when doing business for the Company.

Whenever possible, employees should obtain prior management approval for any expenditures not specifically covered in the policy. Exceptions to this policy require prior approval from the employee's immediate supervisor. It is the responsibility of all managers to ensure that employees who travel are aware of and adhere to this policy.

Contact Information

Any questions regarding business travel should be referred to Workplace Services in Columbus (200-1882).

Policy Guide - Responsibilities

Each individual who incurs business expenses must be guided by the policies stated herein and is responsible for adhering to these policies. Individuals who are authorized to approve travel, entertainment, and related expenses are responsible for the effective administration of this T&E policy. Individuals who administer Company resources used for travel and entertainment are responsible for their proper control and accountability.

In addition to complying with each provision of this T&E policy, each employee who incurs business expenses is also responsible for obtaining the approvals required by this policy.

Employees must use the corporate credit card and the AEP travel department for all business travel arrangements.

What Are My Responsibilities

It is the responsibility of each employee to ensure that an expense report is prepared and submitted for T&E business expenses incurred by them on behalf of the Company. An electronic expense report should be completed within one corporate charge card billing cycle. It is the employee's responsibility and the approving supervisor's responsibility to ensure proper accounting of expenses and to ensure that all applicable codes of conduct are followed.

Individuals responsible for administering this policy are also responsible for ensuring that their subordinates are aware of the extent and limitations of its provisions before travel and entertainment are undertaken. Furthermore, the responsible administrator must determine that the travel or entertainment is necessary to accomplish a legitimate business purpose and that the modes of transportation, type and extent of entertainment, accommodations, etc., are appropriate for that purpose.

Charging another department in an expense account other than the employee's department is permitted only when authorized by the department being charged with the expense. According to AEP budget control practices, expected travel and entertainment expenses should be in the budget of the department that will incur the expenses. Effective budget control and supervisory approval rests within the department incurring the expenses. This presents two options for submitting such expense account reports. 1) The employee can limit expense account reports to charges for a single department and submit them to an approving supervisor authorized for the department being charged. Or, 2) the employee can submit expense account reports to multiple approving supervisors; one authorized for each department being charged.

Employees who use or administer Company funds, assets, and other resources used for travel and entertainment purposes are responsible for ensuring that any use of these resources has been properly authorized, proper receipts are provided, and that adequate records are maintained to ensure that use of these resources is properly controlled and accounted for.

Policy Guide - Corporate Charge Card

AEP's objectives for T&E activities are to:

1. Obtain as much value as possible from travel expenditures,
2. Reduce the out-of-pocket burden employees bear from paying business-related travel expenses, and
3. Streamline the accounting process for classifying, paying, and reporting T&E expenses.

To meet these objectives, AEP has implemented NOVA (New OneCard Venture Accounting application) the electronic expense reporting system. A major component of NOVA is the Corporate Card, a Company charge card issued to an employee to facilitate Company business. Supply Chain administers the card program, while NOVA Administration administers all expense related issues. Corporate Card charges will be posted to NOVA for classification. This card program is Corporate Liability/Corporate Pay and the Company pays the balance in full each month.

The Corporate Card is intended for business use only.

Corporate Supply Chain Policy governs use of the Corporate Charge Card for procurement activities.

Proper Use

See the table below for an outline of proper Corporate Card use.

Corporate Card Approval	Employees who will be traveling on Company business should obtain a Corporate Card by completing a new card application found within the Shared Services website. All employees issued a Corporate Card must ensure that the card is used solely for Company business purposes on their behalf. Loss of a card is to be promptly reported to the credit card issuing company and to Corporate Supply Chain in Columbus – 200-6764.
Cash Expenditures	Some travel expenses may require cash payment (toll roads, bridge fees, parking fees, etc.). For these expenses, employees may obtain a cash advance using the Corporate Card. However, these advances should be of a nominal amount. Employees should check with their supervisor/manager for specific guidelines and limits.
Personal Use	The Corporate Card is issued to an employee to facilitate Company business only . If a Corporate Card is inadvertently used for any personal expenses, the employee must designate these charges as personal on a NOVA expense report. If the report is approved with a credit balance, the employee will be billed and is liable for reimbursing the Company for these charges. Under no circumstances should the employee attempt to pay the corporate card issuing company.

Policy Guide - General Travel Arrangements

All reservations for airline tickets, car rentals and hotels, per AEP Corporate Policy, are required to be made through AEP Travel. Booking travel exclusively through AEP Travel is essential to maximizing AEP's ability to negotiate favorable discounts with airlines and travel service providers.

AEP Travel – 24/7 Service

General Travel Information – Audinet 8.200.3332 or 8.200.3333

Toll-free – 888.237.7008

Direct – 614.716.3332

Fax: 614.901.3131

Email address: aeptravel@AEP.com

AEP Travel offers an online booking system, Cliqbook, and employees are encouraged to use this option to make travel reservations whenever possible. Access the [travel web page](#) for additional information.

Traveler Profile

Each employee will have a travel profile in [Cliqbook](#). If you have a problem connecting to Cliqbook, please call AEP Travel. The employee should continue to [update the travel profile](#) online with relevant business and personal information. Keeping your profile updated is important to ensure accurate travel reservations.

Internet Bookings

On-line booking of air, car and hotel is not allowed because:

- Internet fares are highly restrictive and lack flexibility to change/credit.
- Emergency travel assistance and traveler tracking ability are lost.
- Travel data collection and management reports are compromised.
- Commissions, rebates and contract incentives are lost.

Policy Guide - Air Transportation

Air travel is authorized only for business destinations that require more than four hours by car, unless otherwise approved by the employee's supervisor. Due to increased time required by airport security measures and the increased cost of air travel, common sense and good judgment should be used to determine if it is more time-efficient or economical to drive or take an alternate method of transportation.

Employees are expected to use the lowest logical airfare available. Advance booking of travel is key to obtaining the lowest airfares and securing the traveler's preferred schedule. Ideally, all reservations should be made at least seven days in advance, with greater cost savings opportunities possible with fourteen or twenty-one day advance purchases.

All first class travel should have the prior written approval of an employee's supervisor.

Each manager is responsible for preventing key people from traveling on the same flight to avoid severe repercussion to the Company in the event of an accident.

International Reservations

All international travel should be in coach class unless the durations of the international flight exceeds seven hours from the gateway city. In those cases, business class may be requested.

AEP Travel provides assistance in obtaining passports and visas. Travelers will also be advised of the proper documentation necessary for each destination. Passports and visas require 2 weeks lead-time, depending on the country of destination.

Corporate Aircraft

An employee may travel on corporate aircraft on company business with approval by a member of the Executive Council or his/her designee. The expenses for the use of corporate aircraft are billed to the requesting department via the SLA (Service Level Agreement). Refer to the Corporate Aviation policy found on the travel web page for information on corporate aircraft.

Air Transportation Details

See details of air transportation in the table below.

- 1 Obtaining the lowest logical fare may require one or more of the following: (1) Use of one-stop or connecting flights, (2) Use of alternative airport, (3) Selection of a flight within a two-hour time window (two hours on each side of the requested departure/arrival time).

Refusal of a lower-cost itinerary will be indicated on exception reports and sent to appropriate business units.
- 2 If changes are necessary after airline tickets have been issued or while you are enroute, call AEP Travel (24/7 Service) and you will be advised of the best procedure to handle the change.
- 3 If you have to cancel a trip with a non-refundable airline ticket, in most cases the value can be applied towards future travel on the same airline within one year of purchase (minus the airline's administrative fee). To maximize the value of the original ticket, apply it towards a ticket of equal or greater value. Contact AEP Travel to discuss.
- 4 In the event an employee loses or misplaces an airline ticket, report this loss immediately to AEP Travel so a replacement ticket can be issued. A lost ticket application will be completed by AEP Travel and forwarded to the appropriate airline for processing and reimbursement to AEP. A lost ticket fee will be incurred.

- 5 AEP Travel should be notified of all unused airline tickets (paper or electronic) for a refund. Tickets that are expirable documents and refunds cannot be credited until the ticket is returned to AEP Travel. Credits may not be reflected on credit card statements for up to 30 weeks.
- 6 Frequent flyer or other incentive programs should never influence airline choices when an accessible alternative exists at a lower cost.
- 7 Occasionally, a trip may combine business and personal travel, as in the case of extending a business trip to include vacation. Prior approval by the employee's supervisor is required whenever business and personal travel is combined. On these approved trips, the cost of the airline ticket is a justifiable expense provided it does not increase the cost of airfare. If the cost of the airline ticket increases as a result of personal travel, the employee will be responsible for the cost difference. AEP Travel will inform you of the cost of the business portion of the trip and the cost of the overall trip.
- 8 An employee may, with supervisory permission, extend the duration of a trip over a Saturday night to qualify for a lower airfare on condition that the additional cost of hotel, meals, and ground transportation is less than airfare savings. The employee is to expense the lesser of the following:
(1) regular lowest logical fare, or
(2) the lower-cost airfare with the Saturday night stay plus additional expenses including lodging, car rental, and meals.
- 9 Personal travel expenses for family members who accompany employees while on Company business are generally not reimbursable. On rare occasions, there may be an extenuating business necessity for spouses or other family members to accompany employees on a business trip. Travel expenses for family members will be reimbursed in this situation only if authorization has been obtained from the employee's supervisor.
- 10 AEP Travel may make personal travel arrangements for accompanying family/friends; however, the related expenses must be billed directly to the employee.
AEP Travel provides assistance in obtaining (upward) visas. Travels will also be advised of the proper documentation necessary for each destination. Visas and visas require 2 or more weeks lead time, depending on the country of destination.

Policy Guide - Rail Transportation

For rail trips of less than six-hours duration, coach seats should be secured. A roomette or single duplex may be used on longer-distance trips. Tickets may be purchased at train stations or through AEP Travel.

Policy Guide - Ground Transportation

Travelers should use the most effective and efficient ground transportation. Enterprise Rent-a-Car (AEP's Preferred local car rental agency) provides rental vehicles in AEP's 11 states. Call Enterprise directly to make reservations. Phone numbers are available under [Traveling by car](#) in the Travel web page. National and Thrifty will continue to be used for all airport rentals. AEP Travel will reserve airport rentals. Hotel van, limo, and taxi services should be selected on a cost-effective basis.

Personal Car Use

Employees using a personal vehicle for business purposes must maintain a safe operating vehicle that projects the appropriate Company image. Employees using personal vehicles shall have proof of sufficient insurance coverage on file with their supervisor/manager. Company requires that employees carry minimum liability insurance limits of \$100,000 / \$300,000 / \$50,000. Reimbursement will be made on a mileage basis at the appropriate rate as provided by the Internal Revenue Service. The AEP standard mileage rate is included in NOVA. Refer to the section on the Travel web page on [use of personal vehicle for Company business](#) for additional details.

Employees should check with their automobile insurance agent or insurance carrier to understand their personal liability for use of their personal vehicle on company business. In the event that the employee's insurance does not cover the extent of the liability, then the remaining liability will be borne by the company, however, the company will not reimburse the employee for any deductibles described in the employee's coverage, nor for any damage to the employee's vehicle.

Use of personal vehicles on company business is viewed as a convenience to the employee (in lieu of using a rental vehicle). AEP's liability coverage is secondary to the employee's personal automobile liability insurance, but does cover amounts greater than the employee's coverage (minimum limits noted above). AEP provides no comprehensive, collision, or deductible coverage for use of personal vehicles.

Car Rentals

Car rental arrangements (except local Enterprise rentals) are required to be made through AEP Travel to ensure that the applicable corporate rate will be utilized. AEP has negotiated car rental rates with major suppliers. Employees are encouraged to plan their travel to return the rental car to the renting location to avoid unnecessary drop-off charges.

Employees should rent intermediate or mid-size cars. Arrangements for a larger vehicle may be necessary if three or more employees are traveling together or to accommodate equipment and luggage being transported.

Employees must use the Corporate card when renting to make sure they are covered for collision. (See Collision Damage Waiver below.)

Collision Damage Waiver

Car rental insurance is included in the negotiated rate for Enterprise, National and Thrifty. For all other rental companies, for domestic rentals, Collision Damage Waiver should be declined. One of the benefits of the Corporate card is that it provides the collision coverage insurance for AEP Rental Vehicles (i.e., for damage to the rental car itself). This is an extremely important benefit, as AEP **does not** provide this coverage.

Employees must use the Corporate card when renting vehicles. Otherwise, if there is damage to the rental vehicle, the employee will not be able to take advantage of the insurance benefit.

Additionally, the employee's personal automobile insurance coverage may have to respond (and cover the

damage to the rental car itself), just as when an employee is driving his/her personal vehicle on Company business.

The only time you accept collision coverage from the rental car company is when you rent a truck, 15-passenger-van or a cargo van. Also, if you are driving or parking off-road.

Mastercard will not cover rentals that are rented over 30 consecutive days. Mastercard's policy is to return the car before 29 days and rent another vehicle from Enterprise in a **different city or rent from a different vendor** in order for the Mastercard insurance to apply. Always discuss different options with Enterprise or any car vendor before reserving long-term rentals.

International Ground Transportation

Employees should accept all insurance coverage when renting vehicles outside of the United States.

Authorized Drivers

Only AEP employees may drive an AEP rental vehicle. AEP's car rental agreements state authorized operators of a rental vehicle as the employee signing the contract. If additional AEP employees are driving the car then their names need to be added to the rental agreement to ensure that all drivers are insured under our Corporate card collision damage insurance program.

Personal Use of Business Rental Vehicles

Employees who may be combining a scheduled vacation with a business trip may NOT use the business rental car for that purpose. The employee must return the business rental and obtain a separate rental with a new rental contract in his/her own name.

Drinking & Driving Prohibited

Operating a vehicle while under the influence of alcohol or drugs is absolutely against Company policy and is prohibited. Additionally, rental and other insurance coverage may be invalidated if the driver has been drinking. The driver may be personally responsible for damages.

Refuel Rental Cars

All rental cars should be returned to the agency with a full tank of fuel since the rate charged for refueling by the car rental agency is significantly higher than at the pump.

What To Do In Case Of an Accident

The following information pertains to domestic car rental. International renters should obtain this information from the rental agency when the vehicle is obtained.

POLICE REPORT REQUIRED.

- The police **MUST BE NOTIFIED** of **any** accident involving a rental car. There are no exceptions.
- Do not admit fault.
- Sign no statements except for the police or rental car company.

Liability: Automobile Accidents Involving Injury or Damage to the Public

AEP's Risk & Insurance Management Public Liability Claim Staff will respond to, and handle, any claims **by the public** for property damage or injuries as a result of an automobile accident. Therefore, the Claim Staff

must be notified immediately (as soon as the police have cleared the accident scene) of any automobile accident in which the AEP driver is at fault, or where it is unclear or in dispute as to the cause of the accident. If in doubt, please report the accident to your R&IM Claim staff.

It is the responsibility of the driver of the rental vehicle (and the renter if a fellow employee was driving) to obtain the following information **while at the scene of the accident**:

- Name, address and phone number of other driver(s) and any passengers
- Year, make and model of other vehicle(s) involved
- Extent and location of damage to other vehicle (s) involved
- Name, address and phone number of any witnesses
- Name, address and phone number of the police department and the report number

WHO TO CALL: (1) Micky Davis @ 614.716.2147 or (2) Janice Thompson @ 614.716.2365

AEP **does not** provide coverage for the rental vehicle itself, and damage to the rental car itself **is not** handled by AEP's Risk & Insurance Management Public Liability Claim Staff.

Rather, it is the responsibility of the employee who rented the vehicle to coordinate this process with **the rental company** and the **Corporate MasterCard insurance department**.

Filing the Claim for Damage to the Rental Car

Enterprise, National and Thrifty - If you have rented a car from Enterprise, National or Thrifty, AEP has Collision Damage insurance included in the rate. Please notify the local branch from which you rented the vehicle of the accident. They will need a copy of the police report. Still notify AEP Risk, however, the rental car company will be responsible for paying for damages.

For accidents in rental vehicles in which insurance is not provided in the rate, please follow the steps below:

All AEP employees received the "Guide to Benefits: MasterCard Corporate Payment Solutions Guide to Benefits" when they received their corporate MasterCard.

The following information, taken from that Guide, explains (the basics of) what the employee must do in order to file the insurance claim with the Corporate MasterCard for repairs to the rental vehicle. It is found on the bottom, left hand side of Page 2 of the Guide.

1. Call 1.800.MC.ASSIST to obtain a claim form. You must report the claim within 30 days of the incident or we will not be able to honor your claim.
2. Complete and sign the claim form. Attach all documentation, including a copy of:
 - a. Your MasterCard receipt
 - b. The rental agreement (front and back)
 - c. An accident report or the police report
 - d. The repair estimate from the rental company
 - e. The rental company's Fleet Utilization Log if 'Loss of use' is claimed
3. Submit documents to the MasterCard Assistance Center within 90** days of the incident, or the claim will not be honored. (**Note: The rental company will not wait 90 days for their money-submit this ASAP.)

Local Car Rentals

Enterprise Rent-A-Car Company provides local rental vehicles to employees for business purposes. The Enterprise Rent-A-Car agreement covers all Enterprise locations in AEP's 11 states and adjoining states. Employees, with their supervisor's approval, will still have the option of using an appropriate personal

vehicle for business purposes and receiving a mileage reimbursement equal to the current IRS standard mileage rate. All expenses, due to a designated corporate rate, employees traveling on business should continue to use this or 30th.

The following are required when renting an Enterprise vehicle:

- AEP corporate card number: 80.33439
- Driver's license number of person renting
- AEP identification number
- Business address
- Other phone number

Refer to the [applicable] for additional information. Reservations are to be made directly with Enterprise Corporation.

Expenses incurred as a result of a traffic violation are not reimbursable.

Parking fees and toll charges are reimbursable expenses.

Expenses that cannot be charged to the Corporate Card should be paid in cash and submitted with bills paid through HCS.

Policy Guide - Lodging

Reservations for overnight accommodations are to be made at moderately priced hotels within a reasonable distance from the travel destination. Preferred AEP hotels are listed in the Hotel Database found by accessing the Travel web page.

Making Hotel Reservations

Hotel reservations are required to be made through the AEP Travel Department. Booking through one source will enable us to negotiate volume rates. Travelers should choose moderately priced hotels. Hotels used most often by employees are listed as Preferred AEP hotels in the Hotel Database found by accessing the Travel web page.

Billing

Employees should arrange to pay their hotel bill at checkout. Payment is required to be made utilizing the AEP corporate card. The hotel bill must be submitted to AEP Accounts Payable, C/O Receipts Administrator, 301 Cleveland Ave., S.W., Canton, OH 44702-1623, using the NOVA Receipts Cover Sheet.

Cancellations

Employees are responsible for canceling a hotel reservation that has been guaranteed for late arrival or for notifying AEP Travel to cancel the reservation. A record of all such cancellations, referring to the cancellation number and name of the hotel employee taking the cancellation, should be kept for a minimum of 90 days to resolve any "no show" disputes.

Convention or Seminar Bookings

Employees may book through a convention or seminar's housing bureau to obtain the convention/seminar discount. Employees will advise AEP Travel of the hotel name/address, so the information can be added to their reservation record.

Policy Guide - Telephone Charges

Employees are reminded to use the Company audinet phone system to conduct Company business whenever possible.

A personal telephone call to an employee's home may be made daily when that employee is out of town on Company business. Calls are to be of moderate length advising family members of safe arrival, estimated arrival time back home, etc.

Policy Guide - Business Meals

In general, meal expenses are reimbursable when the employee is on overnight travel status. Where possible, employees shall use their Corporate Card for meal costs. Employees should select restaurants that are reasonably priced for the locality and conducive to the purpose of business to be conducted. Employees are not to charge meals that are lavish or otherwise extravagant.

Meal expenses may also be charged if the expenses incurred are for business entertainment purposes or for meals while working overtime. Individual luncheon expenses incurred on other than overnight trips are not to be charged except when incurred while dining with others for business purposes. Employees should check with their supervisor for specific guidelines.

Meals Among Employees

Employees at the same location are not to entertain one another at the Company's expense. However, if it is necessary for a group of employees to dine together for business purposes, the cost of these meals can be charged. Prior approval for these types of meals should be obtained from the appropriate supervisor. The highest level employee should assume responsibility for the total expense. All employees present at the meal must be listed within the NOVA expense report (or a list may be attached to the NOVA Receipts Cover Sheet) including the business reason for the meal.

Meal Tips and Other Gratuities

Tips may be included as part of the total meal cost. As a guideline, 15 percent of the total bill is considered an acceptable tip. Other gratuities can be included when confined to reasonable limits as determined by the services required and received.

Policy Guide - Laundry Service

Laundry and cleaning/valet service expenses for business trips consisting of five or more consecutive days should be charged to a Corporate Card. Laundry and cleaning expenses must be reasonable and not exorbitant.

Policy Guide - Business Entertainment

Each employee will need to review with their supervisor the specific guidelines and procedures for business entertainment as it applies to their business unit. These instructions will provide guidance in making reasonable, informed, and ethical decisions regarding these types of expenses.

Most business entertainment will consist of business lunches and dinners. Employees providing these meals should make sure expenses are reasonable and not extravagant. This entertainment should not become repetitious or excessive with the same party. Care should be exercised in the frequency of using a lunch or dinner to discuss business with customers.

If other types of entertainment -- like theater or sporting event tickets -- are provided, caution must be used so these will not be construed to improperly influence or raise questions as to the intended effect on the recipient. In particular, if the entertainment were to involve government employees, violations of the law could come into effect.

Travel or entertainment involving political candidates or public office holders requires prior review by the Legal Department. Under no circumstances will any travel or entertainment be accorded to persons actively campaigning for federal, state, or local office.

Business Gifts

Acceptable business gift amounts that are given and received are clarified in the AEP Code of Conduct. Gifts should be nominal and have approval from the business unit manager.

Policy Guide - Per Diem Allowances

Employees temporarily assigned to locations or areas remote from their home office may, with the endorsement of the associated department supervisor, request a per diem allowance in lieu of accounting for expenses as incurred. The per diem allowance will be determined on the basis of recent cost experience in the area of temporary assignment, and must be approved in advance by a department supervisor. The per diem allowance must not exceed IRS guidelines. IRS per diem rates can be found by accessing the [General Services Administration](#) web page.

Policy Guide - Spouse/Family Expenses as Authorized Business Expenses

Expenses incurred by spouses (or other family members) accompanying employees on Company business will be reimbursed only if there is an explicit business necessity for their presence with the employee, and written authorization has been obtained from immediate supervisor.

Policy Guide - Travel Club Memberships

The Company will not reimburse dues or fees for memberships in first class, executive or "red carpet" airline clubs or any other travel clubs.

Policy Guide - Non-Reimbursable Expenses

The following list is not all-inclusive; however, these expenses are usually considered non-reimbursable. Any exceptions or unusual circumstances should be detailed on the electronic expense report, and must be approved by the employee's immediate supervisor.

- Personal Care Items
- Barber/Hair Stylist
- Shoe Shine
- Toiletries
- Personal Entertainment
- Books/Magazines
- Sporting Events
- Theater Tickets
- Personal Losses
- Baby Sitting
- Gifts
- Pet Care
- Personal Property Insurance
- Travel Insurance

Note: Losses of a personal nature, sustained as a result of travel on Company business, are not reimbursable. The traveler should notify the airline, car rental agency, or hotel and employee's personal insurance carrier as soon as the loss/damage occurs.

Policy Guide - Personal Business

Occasionally, a trip may combine personal and Company business purposes. In such instances, the Company will reimburse all properly authorized, business-related expenses; all additional expenses in excess of what would otherwise have been charged for purely business purposes will be borne by the employee.

Policy Guide - Group and Meeting Travel

Any business unit planning to sponsor meeting travel or that has a group of 10 or more people traveling to the same destination and needing off-site (hotel, conference center, etc.) facilities should contact our Travel & Meeting Event Planning Coordinator at Audinet 200-1882.

Refer to the Travel web page, [meeting section](#), for additional information.

Policy Guide - Miscellaneous

Minor expenses of a business nature, not normally incurred by an employee except when traveling and not specifically covered elsewhere in this guide, will be reimbursed. These expenses must be explained on the NOVA expense report.

Policy Guide - Documentation

Travel and/or entertainment expenses must be documented by submitting an expense report. Receipts for all lodging, purchased materials and/or services (if any), foreign travel expenses, and individual cash expenditures of \$75 or more must be submitted to the Receipts Administrator, 301 Cleveland Ave., S.W., Canton, OH 44702-1623 using the NOVA Receipts Cover Sheet.

VAT Reclaim

Value Added Taxes may be "reclaimed" for certain business expenses incurred overseas, particularly in Europe and Canada.

Only original receipts are acceptable for VAT reclamation purposes. Charge/credit card statements are not acceptable. Under NO circumstances should an employee prepare and submit a VAT refund form! Forward all international receipts along with the NOVA Receipts Cover Sheet to the Receipts Administrator, 301 Cleveland Ave, S.W., Canton, OH 44702-1623.

Policy Guide - Travel and Entertainment Forms

An employee designated to receive a Corporate Card must complete a Corporate Card Request Form and submit it to their immediate supervisor for approval. Once approved, the form must be sent to procurement services for processing. The online Corporate Card Request Form is found on AEP Now under the [Credit Card Center](#).

Electronic Expense Report

NOVA expense reports should be completed within one billing cycle. The completed expense report must be submitted as designated by the employee's business unit procedures. Opening the [A-Z Index](#) (AEP Now) and clicking on the letter "N", then NOVA expense reporting can access NOVA.

All expenses reported should be detailed by day except for: 1) airline and rail transportation which should be reported with the first day's expenses, 2) car rental charges which should be noted on the day the billing is rendered to the employee, and 3) Hotel/Motel charges. Taxes, phone charges, parking, etc. can all be categorized as "Room Rate" in the hotel folio, if the Department/Business Unit allows. The Internal Revenue Service with the exception of meal(s) charged to the room does not require itemization.

Traveler Profiles

Each traveler has a travel profile in [Cliqbook](#). If you are not able to access Cliqbook, please call AEP Travel. Access [Cliqbook](#) to make any changes to your travel profile. Keeping your profile updated is important to ensure accurate travel reservations.

EXECUTIVE SUMMARY OF MONTE A. MCMAHON

Monte A. McMahon is Southwestern Electric Power Company's (SWEPCO or the Company) Vice President – Generating Assets. He describes SWEPCO's power plant fleet and the operation and maintenance (O&M) practices SWEPCO employs to prudently manage that fleet. He also supports the reasonableness of SWEPCO's non-fuel generation O&M practices and expenses, certain capital investments made since the test year in SWEPCO's most recent rate case, the expected useful plant lives of SWEPCO's generation units, and the generation-related billings to SWEPCO from its affiliate service company, American Electric Power Service Company (AEPSC).

SWEPCO's existing generation fleet includes the Flint Creek, Welsh and Turk coal units; the Dolet Hills and Pirkey lignite units; and the Arsenal Hill, Stall, Knox Lee, Lieberman, Wilkes and Mattison natural gas units. Mr. McMahon describes notable changes to SWEPCO's generation fleet since SWEPCO's most recent rate case. These changes are the retirements of Knox Lee Units 2-4, Lieberman Unit 2, and Lone Star Unit 1.

Mr. McMahon's testimony presents the depreciation lives of the units in SWEPCO's generation fleet, and describes how the expected useful life of a generating unit is established. These depreciation lives are the same as those explicitly approved or uncontested in SWEPCO's last rate case in Docket No. 46449, with exceptions for the Dolet Hills Power Station, and the retired units just mentioned.

Mr. McMahon then describes the role of the SWEPCO and AEPSC organizations in the operation and management of SWEPCO's generation fleet. SWEPCO

management is responsible for the day-to-day operation and maintenance of SWEPCO's power plants and serves as the interface with AEPSC. He also describes the six groups within AEPSC that provide generation-related services to SWEPCO (for example, the Engineering Services Group). The division of responsibility prevents any overlap or duplication of services between SWEPCO and AEPSC generation employees.

Mr. McMahon describes the process that AEPSC and SWEPCO undertake to determine whether to make a capital addition to a power plant. Both AEPSC and SWEPCO regularly review projects that could provide economic, environmental, reliability, or safety-related benefit for SWEPCO'S generating fleet. Typical practice is to use competitive bidding to ensure that a fair market price is paid for the good or service. Mr. McMahon describes some of the more significant capital projects SWEPCO has performed since its most recent base rate case. These projects are examples of capital projects that were performed to reduce operating costs or improve the performance and reliability of SWEPCO's generating fleet.

Mr. McMahon testifies about SWEPCO's non-fuel production O&M expenses. SWEPCO uses multiple methods to ensure that its non-fuel generation O&M costs are reasonable, including budget controls, cost trends, and careful tracking of staffing levels at its power plants.

Mr. McMahon discusses the affiliate charges from the AEPSC Generation organization to SWEPCO, including how they are charged to SWEPCO and their trends. He explains the evidence supporting those charges and concludes that AEPSC controls costs effectively and that these charges are reasonable.

Lastly, Mr. McMahon describes the performance of SWEPCO's generation fleet, confirming the effectiveness of SWEPCO's O&M and capital additions practices. Using metrics such as Equivalent Availability Factor and Equivalent Forced Outage Rate, together with power plant performance information from the North American Electric Reliability Corporation's Generating Availability Data System, Mr. McMahon explains how the performance of SWEPCO's fleet is reasonable compared to industry performance.

PUBLIC UTILITY COMMISSION OF TEXAS

APPLICATION OF
SOUTHWESTERN ELECTRIC POWER COMPANY
FOR AUTHORITY TO CHANGE RATES

DIRECT TESTIMONY OF
MONTE A. MCMAHON
FOR
SOUTHWESTERN ELECTRIC POWER COMPANY

OCTOBER 2020

TESTIMONY INDEX

<u>SECTION</u>	<u>PAGE</u>
I. INTRODUCTION AND QUALIFICATIONS	1
II. PURPOSE OF TESTIMONY	2
III. SWEPCO'S GENERATION FLEET	4
A. Coal-Fired Power Plants	4
B. Lignite-Fired Power Plants	5
C. Natural Gas-Fired Power Plants.....	5
IV. RECENT CHANGES TO SWEPCO'S GENERATING FLEET	9
V. EXPECTED USEFUL LIVES OF SWEPCO'S GENERATING UNITS.....	10
VI. SWEPCO AND AEPSC GENERATION ORGANIZATIONS	12
VII. CAPITAL ADDITIONS	17
A. Recent Major Capital Additions	18
B. Capital Project Affiliate Charges	20
VIII. SWEPCO'S NON-FUEL PRODUCTION O&M EXPENSES	20
A. Budget Controls and Cost Trends	22
B. SWEPCO Staff Level Trends	24
IX. AFFILIATE CHARGES FROM AEPSC GENERATION.....	27
X. PERFORMANCE OF THE SWEPCO GENERATION FLEET	31
XI. CONCLUSION	38

EXHIBITS

<u>EXHIBIT</u>	<u>DESCRIPTION</u>
EXHIBIT MAM-1	AEP Generation & Utilities Organization
EXHIBIT MAM-2	AEP Fossil & Hydro Organization
EXHIBIT MAM-3	Plant Performance Data - Solid-Fueled Units
EXHIBIT MAM-4	Plant Performance Data - Gas-Fired Units

List of Tables

Table 1: Generation Schedules

Table 2: SWEPCO's Existing Generating Assets

List of Figures

Figure 1: SWEPCO Generating Fleet O&M (Actual vs Budget) 2017 through 2019

Figure 2: SWEPCO Generating Fleet O&M Expenses - 2017 through the Test Year

Figure 3: SWEPCO Staffing Levels - 2017 through the Test Year

Figure 4: AEPSC Generation O&M Affiliate Charges to SWEPCO

Figure 5: AEPSC Generation Organization Staffing

Figure 6: AEPSC Generation Total Actual vs Budgeted Expenses

Figure 7: AEPSC Generation SWEPCO-Only Actual vs Budgeted Expenses

1 I. INTRODUCTION AND QUALIFICATIONS

2 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

3 A. My name is Monte A. McMahon. My business address is 2400 FM 3251, Hallsville,
4 Texas.

5 Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

6 A. I am Vice President - Generating Assets for Southwestern Electric Power Company
7 (SWEPCO or the Company). SWEPCO is a subsidiary of American Electric Power
8 Company, Inc. (AEP). I am responsible for the safe, reliable, efficient and
9 environmentally-compliant performance of SWEPCO's generating assets. More
10 specifically, I oversee and direct the operations and maintenance (O&M) and capital
11 budget expenditures with responsibility for allocation of budget resources to ensure
12 the financial optimization of those generating assets. I work with SWEPCO
13 executive leadership, AEP's Fossil & Hydro Generation group, AEP's Commercial
14 Operations group, and the American Electric Power Service Corporation (AEPSC)
15 organization to optimize the effectiveness of SWEPCO's generation assets.

16 Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL
17 BACKGROUND.

18 A. I received a Bachelor of Science degree in Mechanical Engineering in 1990 from
19 Texas Tech University. I began my career with Central & Southwest Corporation in
20 January 1991 and held various engineering and management positions. In 2000, I was
21 promoted to Superintendent Regional Service Organization West with American
22 Electric Power to provide maintenance services to power plants in Texas, Oklahoma,

1 and Arkansas. In 2005, I became the Regional Outage Manager responsible for
2 implementing and managing an outage preparation process for the western coal fleet.
3 In 2010, I was named Plant Manager of AEP subsidiary Public Service Company of
4 Oklahoma's (PSO) Oklaunion Power Station, followed by a promotion to Vice
5 President of PSO Generating Assets in 2018. I assumed my current position in
6 August of 2020.

7 Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY BEFORE A
8 REGULATORY AGENCY?

9 A. Yes, in September of 2018, I provided testimony on behalf of PSO in its base rate
10 case application before the Oklahoma Corporation Commission in Cause No. PUD
11 201800097.

12

13 II. PURPOSE OF TESTIMONY

14 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

15 A. The purpose of my testimony is to describe SWEPCO's fleet of power plants and the
16 practices that SWEPCO employs to prudently manage that fleet. I will support:

- 17 • the reasonableness of SWEPCO's level of non-fuel generation O&M
18 expense during the twelve month period from April 1, 2019 through
19 March 31, 2020 (the "Test Year");
- 20 • the capital investments made in SWEPCO's generating plants since July 1,
21 2016;
- 22 • the expected useful lives of SWEPCO's generating units; and
- 23 • those portions of the generation-related billings to SWEPCO from its
24 affiliate, AEPSC, that are related to the Generation functions for which I
25 am responsible.

1 Q. DO YOU SPONSOR OR CO-SPONSOR ANY SCHEDULES FROM THE RATE
2 FILING PACKAGE?

3 A. The following table contains the list of schedules that I sponsor or co-sponsor, with a
4 general description of each.

Table 1: Generation Schedules

Schedule	Description	Co-Sponsor
D-6	Retirement Data for All Generating Units	Jason A. Cash
D-8	Generating Unit Service Life	Jason A. Cash
H-1	Fossil Company-wide O&M Expenses Summary	Michael Baird
H-1.2a	Natural Gas Plant O&M Summary	Michael Baird
H-1.2a1	Natural Gas (Steam Generation)	Michael Baird
H-1.2a2	Natural Gas (Combustion Turbine)	Michael Baird
H-1.2b	Coal Plant O&M Summary	Michael Baird
H-1.2c	Lignite Plant O&M Summary	Michael Baird
H-1.2d	Other Plant O&M Summary	Michael Baird
H-2	Summary Adjusted Test Year Production O&M Expenses	Michael Baird
H-3	Summary of Actual Production O&M Expenses Incurred	Michael Baird
H-4	Major O&M Projects	Michael Baird
H-5.2b	Fossil Capital Costs Projects	Michael Baird
H-5.3b	Fossil Capital Expenditures (Historical, Present, Projected)	Michael Baird
H-6.2a	Fossil Unit Forced Outage History	None
H-6.2b	Fossil Unit Planned Outage Data	None
H-6.2c	Fossil Unit Outage Planning	None
H-6.3b	Fossil Unit Incremental Outage Costs	None
H-7.1	Companywide Staffing Plan	None
H-7.2	Production Plant/Unit Staffing Study	None
H-7.3	Personnel Assigned per Plant	None
H-7.4	Average Number of Personnel Assigned per Plant	None
H-7.5	Production O&M Organization Charts	None
H-8	Production Operations Programs	None
H-9	Production Maintenance Programs	None
H-11.1	O&M Expenses per Production Plant Expenses in Percent	Michael Baird
H-11.2	Maintenance Man-Hour Ratio	None
H-11.3	O&M Cost per MWh	Michael Baird
H-12.3a	Unit Data	None
H-12.3b	Unit Characteristics	None
H-12.3c	Efficiency & Control Systems	None
I-5.1	Combustion Residual Production	None
I-5.2	Combustion Residual Disposal	None
I-5.3	Combustion Residual Disposal Costs	Michael Baird

1 III. SWEPCO'S GENERATION FLEET

2 Q. PLEASE DESCRIBE SWEPCO'S GENERATION STRATEGY.

3 A. SWEPCO owns a diverse generating fleet that is effectively used to meet its
4 customers' demand. SWEPCO's generation strategy is to cost-effectively generate
5 electricity for its customers, utilizing a variety of units, from large coal and lignite
6 units to smaller natural gas-fired boilers and combined cycle and simple cycle
7 combustion turbines (CTs) that can be used to meet intermediate and peak demand.

8 Q. PLEASE DESCRIBE SWEPCO'S GENERATION FLEET.

9 A. SWEPCO's generation fleet includes coal, lignite, and natural gas-fired power plants,
10 each of which is briefly described below.

11 A. Coal-Fired Power Plants

- 12 • The Flint Creek Power Plant is a jointly-owned plant located in Benton
13 County, Arkansas, near the town of Gentry. Flint Creek is a single-unit plant
14 with a net capacity of 516 Megawatt (MW) and was placed in service in 1978.
15 The unit is fueled with coal from the Powder River Basin (PRB) that is
16 delivered to the plant by rail. Diesel fuel is used for ignition and flame
17 stabilization. An activated carbon injection (ACI) system and a dry flue gas
18 desulfurization (FGD) system, including an integrated fabric filter assembly,
19 were installed in 2016 to address environmental requirements. Arkansas
20 Electric Cooperative Corporation (AECC) is the co-owner on a 50/50 basis.
21 SWEPCO's ownership portion of this unit is 258 MW net and it is responsible
22 for the operation and maintenance of the plant.
- 23 • The John W. Turk, Jr. Power Plant (Turk) is located near Fulton, Arkansas in
24 Hempstead County. Turk is a single-unit, ultra-supercritical plant with a net
25 capacity of 650 MW and was placed in service in December 2012. The unit is
26 fueled with PRB coal that is delivered to the plant by rail. Natural gas is used
27 for flame stabilization. The Turk Plant is the first ultra-supercritical
28 generating unit to go into operation in the United States, and is among the
29 cleanest, most efficient pulverized coal-fired plants in the country. The plant
30 was designed and constructed with a selective catalytic reduction system to
31 mitigate emissions of nitrogen oxides (NO_x), and a dry FGD system to
32 mitigate emissions of sulfur dioxide (SO₂). This plant is co-owned with

1 AECC, East Texas Electric Cooperative, and the Oklahoma Municipal Power
2 Authority (OMPA). With an ownership share of 477 MW, SWEPCO is
3 responsible for the operation and maintenance of the plant.

- 4 • The Welsh Power Plant is located near Cason, Texas in Titus County. The
5 Welsh Plant originally included 3 units, with Unit 2 being retired on April 16,
6 2016. Welsh Unit 1 was placed into commercial operation in 1977 and was
7 the Company's first coal-fired unit. Unit 3 was placed in service in 1982.
8 Unit 1 has a net capacity of 525 MW and Unit 3 528 MW, for a plant total of
9 1,053 MW. These units burn PRB coal that is transported to the plant by rail,
10 and use diesel fuel for ignition and flame stabilization. An ACI system was
11 installed in 2016 on Units 1 and 3, to address environmental requirements.

12 B. Lignite-Fired Power Plants

- 13 • The Dolet Hills Power Station is located near Mansfield, Louisiana, in DeSoto
14 Parish. It is a single-unit lignite-fired plant with a net capacity of 638 MW.
15 SWEPCO, CLECO, North Texas Electric Cooperative (NTEC) and OMPA
16 each own a portion of this unit. CLECO is responsible for the operation and
17 maintenance of the plant, which went into commercial operation in 1986. The
18 Dolet Hills Plant was designed with a wet FGD system to minimize emissions
19 of SO₂. SWEPCO's ownership portion of this unit is 257 MW net. The
20 primary source of lignite for the plant consists of reserves that are jointly
21 owned by SWEPCO, CLECO, NTEC and OMPA that are situated adjacent to
22 the plant. Natural gas is used for ignition and flame stabilization.
- 23 • The Henry W. Pirkey Power Plant is located near Hallsville, Texas in Harrison
24 County and consists of one lignite-fired unit with a net capacity of 675 MW.
25 Commercial operation of Pirkey began in 1985. It was the Company's first
26 unit to utilize lignite fuel and also the first unit to be constructed with a wet
27 FGD. An ACI system was installed in 2015, to address environmental
28 requirements. Pirkey is jointly owned by SWEPCO, OMPA, and NTEC.
29 SWEPCO owns 580 MW of the net unit capacity and is responsible for the
30 operation and maintenance of the plant. Lignite for this unit is mined adjacent
31 to the plant by a contract miner on reserves controlled by SWEPCO. The unit
32 utilizes natural gas for ignition and flame stabilization.

33 C. Natural Gas-Fired Power Plants

- 34 • The Arsenal Hill Power Plant is located in Caddo Parish, within the city limits
35 of Shreveport, Louisiana. A single unit facility, Arsenal Hill Unit 5 is a
36 natural gas-fired plant with a net capacity of 110 MW, which was placed in
37 service in 1960. This unit was originally designed as the Company's first
38 peaking unit, and has continued to act as a peaking unit throughout its years of
39 service. The plant is critical to maintaining the reliability of SWEPCO's

1 electric power/transmission system during periods of high electric demand in
2 the summer and during cold weather conditions in the winter. The availability
3 of Arsenal Hill is also critical to the reliability of SWEPCO's system during
4 the Spring and Fall when maintenance outages for the solid fuel plants
5 typically occur.

- 6 • The J. Lamar Stall Plant was placed in service in June 2010 and is located on
7 the same property as the Arsenal Hill Plant. It is a "2 by 1" combined cycle
8 unit, where two CTs generate electricity, and the waste heat from those CTs
9 feeds two heat recovery steam generators, which drive a single steam turbine.
10 Each CT is rated at a nominal net capacity of 170 MW, with the steam turbine
11 at a nominal net capacity of 193 MW.
- 12 • The Knox Lee Power Plant is located in Gregg County on Lake Cherokee near
13 Longview, Texas. The Knox Lee Plant originally included four natural gas-
14 fired generating units (Unit Nos. 2 through 5), with Units 2 and 3 being retired
15 on May 1, 2020 and Unit 4 on January 1, 2019. Placed in service in 1974,
16 Unit 5 is the largest of the four units with a net capacity of 344 MW.
- 17 • The Lieberman Power Plant is located near Mooringsport, Louisiana, in
18 Caddo Parish. The Lieberman Plant originally included four natural gas-fired
19 generating units, with Unit 1 having been retired in 2015 and Unit 2 on May 1,
20 2020. Units 3 and 4 were placed in service in 1957 and 1959, respectively,
21 and have a total net capability of 217 MW.
- 22 • The Wilkes Power Plant is located in Marion County, Texas, between
23 Jefferson and Avinger. The three units at this plant have a combined net
24 capacity of 889 MW. Units 1, 2, and 3 were placed in service in 1964, 1970
25 and 1971, respectively. Unit 1 is has the ability to burn a gas/fuel oil
26 combination at reduced load. Units 2 and 3 are fueled by natural gas only. In
27 2008, three 2.5 MW diesel generators were added to Wilkes Unit 1 to make
28 this plant "black start" capable, meaning that the plant is able to start up under
29 its own power when no electricity is available from the grid to do so. Due to
30 its black start capability, Unit 1 at the Wilkes Plant has been designated as a
31 "must run" unit.
- 32 • The Mattison Power Plant is located in Washington County, Arkansas, near
33 the town of Tontitown, and consists of four natural gas simple-cycle CTs, with
34 a combined nominal net capacity of 315 MW. These MW ratings are nominal
35 ratings, as the actual electrical output of these turbines vary depending on
36 ambient air conditions. All four units were placed into commercial operation
37 in 2007. The plant is critical to maintaining the reliability of SWEPCO's
38 electric power/transmission system during periods of high electric demand in
39 the summer and during cold weather conditions in the winter. The Mattison
40 units are also critical to the reliability of SWEPCO's system during the Spring
41 and Fall when scheduled maintenance outages for the solid-fuel units typically

1 occur. Like the Wilkes Plant, the Mattison Plant is also a black start capable
2 generating facility.

3 SWEPCO's existing generating plants are summarized in the following table.

Table 2: SWEPCO's Existing Generating Assets

Plant	Unit	Output Max Net MW Capability	In- Service Year	Depreciable Life	Primary Fuel	City	County/ Parish	State
Flint Creek	1	516*	1978	60	Coal	Gentry	Benton	AR
Turk	1	650	2012	55	Coal	Fulton	Hempstead	AR
Welsh	1	525	1977	60	Coal	Cason	Titus	TX
Welsh	3	528	1982	60	Coal	Cason	Titus	TX
Dolet Hills	1	638**	1986	35	Lignite	Mansfield	DeSoto	LA
Pirkey	1	675***	1985	60	Lignite	Hallsville	Harrison	TX
Arsenal Hill	5	110	1960	65	Natural Gas	Shreveport	Caddo	LA
Knox Lee	5	344	1974	65	Natural Gas	Longview	Gregg	TX
Lieberman	3	109	1957	65	Natural Gas	Mooringsport	Caddo	LA
Lieberman	4	108	1959	65	Natural Gas	Mooringsport	Caddo	LA
Wilkes	1	164	1964	65	Natural Gas	Avinger	Marion	TX
Wilkes	2	365	1970	65	Natural Gas	Avinger	Marion	TX
Wilkes	3	360	1971	65	Natural Gas	Avinger	Marion	TX
Mattison	1	78	2007	45	Natural Gas (Combustion Turbine)	Tontitown	Washington	AR
Mattison	2	78	2007	45	Natural Gas (Combustion Turbine)	Tontitown	Washington	AR
Mattison	3	79	2007	45	Natural Gas (Combustion Turbine)	Tontitown	Washington	AR
Mattison	4	80	2007	45	Natural Gas (Combustion Turbine)	Tontitown	Washington	AR
Stall	6A, 6B, 6S	534	2010	40	Natural Gas (Combined Cycle)	Shreveport	Caddo	LA

* SWEPCO's Share is 258 MW

** SWEPCO's Share is 257 MW

*** SWEPCO's Share is 580 MW

4 Q. WHAT CHALLENGES DOES SWEPCO FACE IN THE NEAR FUTURE WITH
5 RESPECT TO THE PERFORMANCE OF ITS GENERATION FLEET?

1 A. First and foremost, as shown in the In-Service Year column in Table 2 above,
2 SWEPCO owns a fleet of aging power plants. With the exception of Mattison, Stall,
3 and Turk, the average age of a SWEPCO generating units is 48 years.

4 This is not to say that the SWEPCO plants are too old to run reliably.
5 However, as with any aging equipment, many of SWEPCO's plants are arriving at an
6 age that requires larger capital investments to be made to maintain the reliability that
7 SWEPCO's customers have benefited from over the past decades.

8 Over the past few years, SWEPCO has made some major capital investments
9 – such as new boiler combustion controls at Flint Creek, replacement of boiler
10 management controls and FGD controls upgrades at the Pirkey Plant, and replacement
11 of major sections of the boiler at Wilkes Units 2 and 3. As these units age, such
12 investments are necessary to maintain them in a reliable and safe condition.

13 With respect to SWEPCO's older operating units, particularly older and
14 smaller natural gas-fired units, consideration must be given to the design and role of
15 the unit when making decisions about major capital investments and/or increases in
16 O&M. Although these units do not operate as often as the lower-cost baseload and
17 load-following units, these units play a critical role in maintaining the reliability of
18 SWEPCO's electric power/transmission system during periods of high electric
19 demand, and must be maintained in a manner such that they will be available to
20 operate when needed. Capital and O&M expenditures on these units are typically on
21 a much smaller scale than on the larger units.

1 Given the need to keep the SWEPCO generation fleet viable into the future, it
2 will be necessary to increase spending on these units in cases where it is economically
3 justified.

4 IV. RECENT CHANGES TO SWEPCO'S GENERATING FLEET

5 Q. WHAT NOTABLE CHANGES TO SWEPCO'S GENERATING FLEET HAVE
6 OCCURRED SINCE SWEPCO'S MOST RECENT BASE RATE CASE?

7 A. Since SWEPCO's most recent base rate case filed before this Commission in 2016 in
8 Docket No. 46449, multiple changes have taken place. In January 2019 SWEPCO
9 retired Knox Lee Unit 4. Additionally, in May 2020 the Company retired Knox Lee
10 Units 2 and 3, Lieberman Unit 2, and Lone Star Unit 1.

11 Q. PLEASE BRIEFLY DESCRIBE KNOX LEE UNITS 2 AND 3, LIEBERMAN UNIT
12 2, AND LONE STAR UNIT 1, AND THE RATIONALE FOR RETIRING THEM.

13 A. In its decision to retire these four units, the Company considered the age and
14 condition of the units' equipment, the significant capital investment required for them
15 to continue operating, and their relatively high cost to generate electricity when
16 compared to the forecasted market price of electricity. In light of those
17 considerations, SWEPCO determined it was in the best interest of the Company and
18 its customers to retire the generating units. A brief description of each unit is as
19 follows:

- 20 • Retired on May 1, 2020, Knox Lee Unit 2, which entered service in 1950,
21 was a 30 MW, natural gas-fired, subcritical boiler. During its 70-year
22 useful life, this small generating unit provided peaking capacity services.

1 The expected retirement date provided in the Company's most recent base
2 rate case for Knox Lee Unit 2 was 2020.

3 • Retired on May 1, 2020, Knox Lee Unit 3, which entered service in 1952,
4 was a 31 MW, natural gas-fired, subcritical boiler. During its 68-year
5 useful life, this small generating unit provided peaking capacity services.
6 The expected retirement date provided in the Company's most recent base
7 rate case for Knox Lee Unit 3 was 2020.

8 • Retired on January 1, 2019, Knox Lee Unit 4, which entered service in
9 1956, was a 79 MW, natural gas-fired, subcritical boiler. During its 64-
10 year useful life, this generating unit provided peaking capacity services.
11 The expected retirement date provided in the Company's most recent base
12 rate case for Knox Lee Unit 4 was 2019.

13 • Retired on May 1, 2020, Lieberman Unit 2, which entered service in 1949,
14 was a 26 MW, natural gas-fired, subcritical boiler. During its 71-year
15 useful life, this small generating unit provided peaking capacity services.
16 The expected retirement date provided in the Company's most recent base
17 rate case for Lieberman Unit 2 was 2019.

18 • Retired on May 1, 2020, Lone Star Unit 1, which entered service in 1954,
19 was a 50 MW, natural gas-fired, subcritical boiler. During its 66-year
20 useful life, this small generating unit provided peaking capacity services.
21 The expected retirement date provided in the Company's most recent base
22 rate case for Lone Star Unit 1 was 2019.

23
24 V. EXPECTED USEFUL LIVES OF SWEPCO'S GENERATING UNITS

25 Q. HOW ARE THE DEPRECIATION LIVES OF THE SWEPCO GENERATION
26 FLEET UNITS SHOWN IN TABLE 2 DETERMINED?

27 A. The expected life of a power plant depends on many factors, including the original
28 design, the current condition of the unit, the cost of compliance with environmental
29 regulations, and the potential cost in the future to replace the generation with another
30 source. In certain cases, where ordered by the Commission, the depreciable life is
31 different from the expected useful life of a generating unit. The useful lives of
32 SWEPCO's generation units for purposes of depreciation are listed in Table 2.

1 Q. ARE THERE ANY CHANGES IN EXPECTED GENERATING UNIT LIVES,
2 WHEN COMPARED TO THE COMPANY'S MOST RECENT BASE RATE CASE
3 PROCEEDING?

4 A. Yes, for the Dolet Hills Power Station. SWEPCO has determined that the
5 economically recoverable reserves from the Dolet Hills and Oxbow mines that service
6 the plant have been depleted. Lignite production ceased in May of 2020 and the plant
7 will be retired no later than December 31, 2021. Considering this 2021 retirement
8 date, the expected useful life of the Dolet Hills plant is now 35 years, as reflected in
9 Table 2, above. SWEPCO's proposed rate treatment for Dolet Hills is addressed by
10 SWEPCO witnesses Michael Baird and Thomas Brice.

11 Q. DO EXPECTED USEFUL LIVES REPRESENT A FIRM COMMITMENT AS TO
12 WHEN A UNIT WILL BE RETIRED?

13 A. No. Expected useful lives are based on variables such as the estimated number of unit
14 starts per year, environmental compliance costs, fuel supply, the forecasted market
15 price of electricity, and assumptions about the cost of replacing generation in future
16 years. An expected unit life does not represent a firm retirement date, but instead
17 represents a best estimate of the approximate expected life over which customers will
18 receive a benefit from that generating unit.

19 Q. WHO IS RESPONSIBLE FOR DETERMINING THE USEFUL LIVES OF
20 SWEPCO'S GENERATING UNITS?

21 A. The useful life of a generating unit is determined with input from many groups.
22 SWEPCO employees and AEPSC engineers track any issues that arise during normal

1 operation, or that are found during equipment inspections. Along with the operational
2 and engineering side, the Generation Business Planning & Analysis group updates
3 assessments of SWEPCO's existing units, as well as assumptions regarding
4 replacement-generating technologies.

5 These groups consider the condition of major equipment, planned major
6 capital investments, O&M expense levels, compliance with existing and expected
7 regulations, and replacement generation costs with the intent of tracking the economic
8 viability of every unit in SWEPCO's fleet. In considering all relevant data, SWEPCO
9 and AEPSC are able to create a reasonable assessment of each generating unit and
10 determine what the expected useful life is for each unit. This information enables the
11 Company to plan the future of its generating fleet and ensure a reliable supply of
12 electricity is provided to SWEPCO's customers at reasonable prices.

13
14 VI. SWEPCO AND AEPSC GENERATION ORGANIZATIONS

15 Q. PLEASE DESCRIBE THE ROLE OF SWEPCO WITH RESPECT TO
16 MANAGEMENT OF THE GENERATION FLEET.

17 A. SWEPCO management is responsible for the day-to-day operation and maintenance
18 of SWEPCO's fleet of power plants (with the exception of the Dolet Hills Power
19 Station that CLECO operates), and also for serving as the interface between
20 SWEPCO's plants and AEPSC.

21 Q. PLEASE DESCRIBE THE STRUCTURE AND ORGANIZATION OF THE
22 SWEPCO AND AEPSC GENERATION GROUPS.

1 A. EXHIBITs MAM-1 and MAM-2 show the organizational structure of the AEP Utility
2 Organization and the Fossil & Hydro Organization and the relationship between
3 AEPSC and SWEPCO generation organizations.

4 EXHIBIT MAM-1 shows the structure of all AEP utilities with respect to the
5 corporate parent company. Malcolm Smoak, the President of SWEPCO, reports to
6 Lisa Barton, the Executive Vice-President of AEP Utilities. Employees reporting to
7 Mr. Smoak are SWEPCO employees, whose primary role is the direct support of
8 SWEPCO's business. The Generation organization is led by Paul Chodak III, who
9 reports to Nick Akins, Chairman, President, and Chief Executive Officer of AEP. As
10 shown, Daniel Lee leads the Fossil & Hydro Generation Organization, of which I am
11 a part. EXHIBIT MAM-2 shows the Fossil & Hydro Generation organization, in
12 which I report to Daniel Lee, the Senior Vice President of the Fossil & Hydro
13 Organization. As a SWEPCO employee, I serve as the interface between the
14 SWEPCO generation fleet and the AEPSC Generation organization. The plant
15 managers who report to me are SWEPCO employees

16 Although I report directly to Mr. Lee, I also have a responsibility to report to
17 Mr. Smoak. I ensure that AEPSC and SWEPCO's management are both aware of any
18 generation-related issues at SWEPCO, but that SWEPCO's management is aware of
19 those same issues. In this manner, we are able to quickly share needed information
20 through any part of the Generation organization, be it through executive leadership or
21 through groups of technical experts within the AEPSC Generation organization.

1 Q. WHAT IS THE RELATIONSHIP BETWEEN SWEPCO AND THE AEPSC
2 ORGANIZATION AS IT RELATES TO GENERATION?

3 A. AEPSC provides SWEPCO with executive leadership, management direction, and
4 staff support. Together, SWEPCO and AEPSC focus on the safe, reliable, and
5 efficient operation of SWEPCO's generation fleet, with planning, engineering and
6 management support services provided by AEPSC and day-to-day operations
7 managed by SWEPCO employees.

8 Q. PLEASE DESCRIBE IN MORE DETAIL THE ROLE OF SWEPCO WITH
9 RESPECT TO MANAGEMENT OF ITS GENERATION FLEET.

10 A. SWEPCO management is responsible for directing SWEPCO generation employees
11 in the operation and maintenance of SWEPCO's fleet of power plants, and also for
12 serving as the interface between SWEPCO's plants and AEPSC.

13 SWEPCO employees at the plant level perform routine maintenance on
14 SWEPCO's power plants. This maintenance may include predictive, preventive, and
15 corrective maintenance. This maintenance may be the result of routine inspection,
16 analysis of operation of a piece of equipment, or through the detection of failure of a
17 piece of equipment at a plant.

18 Furthermore, SWEPCO also has a regional engineering group that reports
19 through the Plant Engineering & Compliance Programs organization within the
20 Engineering Services organization of AEPSC. This group is comprised of SWEPCO
21 employees and provides local engineering and support to SWEPCO's plants.

1 Q. PLEASE DESCRIBE IN MORE DETAIL THE GENERATION-RELATED
2 SERVICES PROVIDED TO SWEPCO BY AEPSC.

3 A. As I previously mentioned, AEPSC provides expertise on the operation and
4 maintenance of SWEPCO's fleet of power plants, as well as outage planning, unit
5 dispatch management, and engineering and environmental support. AEPSC is
6 responsible for providing these shared services for power plants across AEP's entire
7 footprint, to help minimize the overall cost of generation and optimize plant
8 reliability.

9 Because AEPSC provides support to a large number of power plants, it is
10 possible for SWEPCO to have access to generation-related information and
11 knowledge that would not necessarily be readily available within the SWEPCO
12 organization itself. This relationship not only helps SWEPCO operationally, but
13 because the AEPSC charges are spread over a number of operating companies, it is
14 not necessary for SWEPCO to support an entire service organization on its own,
15 which decreases the overall cost to SWEPCO customers while maximizing the benefit
16 of the knowledge gained from a fleet of power plants across AEP's footprint.

17 Q. WHAT ARE THE SPECIFIC AEPSC GROUPS THAT PROVIDE GENERATION-
18 RELATED SERVICES TO SWEPCO, AND WHAT ARE THE SERVICES THEY
19 PROVIDE?

20 A. There are six organizations that report through the Executive Vice President of
21 Generation and are responsible for providing services and support to SWEPCO, four
22 of which I support in my testimony. These six groups are Fossil & Hydro Generation,

1 Engineering Services, Projects Controls & Construction, Generation Business
2 Services, Environmental Services, and Commercial Operations. The roles of the
3 Environmental Services and Commercial Operations organizations are described in
4 the testimony of Company witnesses Brian Bond and Scott Mertz, respectively.

5 Q. PLEASE DESCRIBE THE ROLES OF THESE GROUPS.

6 A. The roles of these groups are as follows:

7 • Fossil & Hydro Generation is the organization within AEPSC that is directly
8 responsible for operating and maintaining the power plants for each of the
9 operating companies owned by AEP. This group is comprised of the Senior Vice
10 President of Fossil & Hydro Generation, as well as the vice presidents and
11 managing directors of Generation. As discussed previously, each operating
12 company vice president operates as an interface between its operating company
13 and the Fossil & Hydro Generation organization.

14 • Engineering Services is responsible for maintaining the design basis information
15 for the plants, and establishing and communicating technical recommendations
16 and requirements to all of the plants across the system. Engineering Services is
17 comprised of the following groups:

- 18 – Electrical and Instrumentation & Controls Engineering, and New
19 Project Development;
- 20 – Digital Engineering Technologies;
- 21 – Plant Engineering & Compliance Programs; and
- 22 – Mechanical, Civil and Chemical Engineering.

23 The Engineering Services organization is also responsible for developing new unit
24 design criteria and the design and engineering of proposed changes to existing
25 power plant equipment and systems, as well as the engineering and planning of
26 larger capital projects at the power plants. The Engineering Services organization
27 is typically responsible for projects costing more than \$750,000, but less than
28 \$5,000,000.

29 • Projects, Controls & Construction is the organization within AEPSC that is
30 responsible for providing project management and execution services for large
31 capital projects for the existing generating plants - those projects greater than
32 \$5,000,000 in total cost, which includes new generation projects. The Projects
33 organization manages safety, construction, cost, schedule and quality activities to
34 ensure successful execution of large capital additions. The Projects Controls and
35 Construction organization is also responsible for the Dolet Hills mining
36 operations.

- 1 • Generation Business Services is tasked with providing financial analyses, and
2 business and strategic planning, within the Generation organization. This group,
3 along with SWEPCO, is also responsible for assisting in the determination of
4 projected useful plant lives.

5 Q. IS THERE ANY OVERLAP OF FUNCTIONS OR DUPLICATION OF EFFORTS
6 BY THE AEPSC GENERATION ORGANIZATION AND SWEPCO?

7 A. No. The division of responsibility I have described prevents any overlap or
8 duplication of services between SWEPCO and AEPSC Generation employees.

9

10 VII. CAPITAL ADDITIONS

11 Q. PLEASE DESCRIBE THE PROCESS THAT AEPSC AND SWEPCO
12 UNDERTAKE TO DETERMINE WHETHER TO MAKE A CAPITAL ADDITION
13 TO A PLANT.

14 A. Both AEPSC and SWEPCO regularly review projects that could provide economic,
15 environmental, reliability, or safety-related benefits for SWEPCO's generating fleet.
16 The first step in any capital addition evaluation is to research alternatives that may
17 exist, and when warranted to perform cost-benefit analyses to estimate a project's
18 value.

19 Once the need for a capital project is determined, the most efficient way to
20 manage the project is selected. This can mean that a project is expedited, or sole-
21 sourced if there is a lack of competition for a given piece of equipment or service.
22 However, typical practice is to competitively bid capital projects to ensure that a fair
23 market price is paid for the good or service. After a competitive bid is accepted,
24 contracts are finalized and the project is executed.

1 Once work on a large capital project begins, SWEPCO benefits from the
2 Project Controls & Construction organization within AEPSC because this group has
3 vast experience in the execution and management of large projects, which can help to
4 contain and control costs as they are incurred by the project. If the project is smaller,
5 it may be managed either by the Engineering Services organization within AEPSC or
6 by SWEPCO's regional engineering group, depending on the total overall cost, scope,
7 and complexity of the project. As a project is being executed, this structure
8 maximizes efficiency while minimizing administrative costs to the greatest extent
9 possible. A small project that may be effectively managed by one person at the
10 regional level will be performed as such. However, for those large capital projects
11 that require oversight and control from various groups and disciplines, the Project
12 Controls & Construction and Engineering Services organizations can control cost and
13 schedule when it is not practical for SWEPCO to do so directly.

14 A. Recent Major Capital Additions

15 Q. PLEASE DESCRIBE SOME OF THE MAJOR CAPITAL ADDITIONS TO
16 SWEPCO'S EXISTING GENERATING UNITS SINCE THE END OF THE TEST
17 YEAR IN DOCKET NO. 46449.

18 A. Since July 2016, the first month following the June 30, 2016 Test Year end in Docket
19 No. 46449, there have been numerous capital additions to SWEPCO's generating
20 fleet to increase availability, efficiency, and to minimize the impact on the
21 environment. While a more comprehensive list of SWEPCO's capital investments is

1 included in Schedule H-5.2b in this filing, the following is a description of some of
2 the more significant capital work that has been completed:

- 3 • Flint Creek Plant: In 2017, new boiler combustion controls equipment and
4 low NOx burners with over-fire air were installed, for \$8.5 million. This
5 equipment was necessary to comply with environmental requirements.
- 6 • Pirkey Plant: In 2019, there were two major projects. The first included
7 replacement and integration of the boiler management control system, the
8 combustion control system, and the boiler soot blower system into a single
9 distributed control system platform, for \$15.5 million. The second was an
10 FGD controls upgrade, for \$6.7 million.
- 11 • Stall Plant: In Fall 2017, a hot gas path inspection and major turbine overhaul
12 was completed on CT 6A for \$12.1 million. In Fall 2018, a hot gas path
13 inspection and major turbine overhaul was completed on CT 6B for \$12.8
14 million.
- 15 • Turk Plant: In 2018, additional landfill space was activated and placed in
16 service, at a cost of \$5.6 million.
- 17 • Wilkes Plant: During 2017 and 2018, Units 2 and 3 replaced the secondary
18 superheat and reheat bank sections of the boiler, and the secondary superheat
19 outlet header, for a combined total of \$13.7 million. The sections of the boiler
20 replaced were original equipment and had been in service approximately 45
21 years. Forced outages due to boiler tube failure and equipment and personnel
22 safety concerns identified during equipment assessments were mitigated by
23 these investments.

24 As I mentioned, the projects above are examples of capital projects that were
25 performed to reduce operating costs or improve the performance and reliability of
26 SWEPCO's generating fleet. Schedule H-5.2b contains a more comprehensive list of
27 capital additions that SWEPCO has made to its plants, including the total cost and the
28 in-service date for all capital work orders greater than \$100,000.

1 B. Capital Project Affiliate Charges

2 Q. DO THE CAPITAL ADDITIONS INCLUDE ANY AFFILIATE CHARGES?

3 A. Yes. See testimony of Company witness Brian Frantz for additional information on
4 the affiliate component of generation-related capital additions. In general, these
5 charges reflect the cost of AEPSC support for SWEPCO generation capital projects,
6 including planning, engineering, design and construction management services.

7 Q. IS THE AFFILIATE COMPONENT OF SWEPCO'S CAPITAL ADDITIONS
8 REASONABLE AND NECESSARY?

9 A. Yes, it is. Generation capital investments are budgeted and reviewed using the same
10 comprehensive planning and cost-tracking processes used to evaluate O&M spending,
11 which I describe later in Section VIII. As I previously discuss, the advantages of the
12 AEPSC shared services and expertise, as it applies to the management and support of
13 SWEPCO capital projects, further supports the reasonableness and necessity of the
14 affiliate component of capital additions.

15
16 VIII. SWEPCO'S NON-FUEL PRODUCTION O&M EXPENSES

17 Q. WHAT IS THE LEVEL OF TEST YEAR GENERATION NON-FUEL
18 PRODUCTION O&M EXPENSE IN THIS PROCEEDING?

19 A. As shown in Schedule H-1, SWEPCO's Test Year level of Generation non-fuel
20 production O&M expense for the 12-month Test Year ending March 31, 2020 is
21 \$130.1 million. Pro forma adjustments to the \$130.1 million are reflected in Schedule
22 G-15, resulting in an adjusted Test Year level of Generation non-fuel production

1 O&M expense in the amount of \$127.6 million. Of the adjustments made, I support a
2 reduction of \$616,316 to remove recently retired generating unit expenses, with the
3 balance of adjustments supported by Company witnesses Frantz and Baird. I will
4 refer to the \$130.1 million in Generation non-fuel production O&M expense as
5 "SWEPCO Generating Fleet O&M."

6 Q. WHAT EXPENSES ARE INCURRED IN THE OPERATION OF SWEPCO'S
7 GENERATING FLEET?

8 A. SWEPCO incurs its own payroll and associated charges for the day-to-day operation
9 and maintenance of its generation fleet, as well as charges from third parties
10 providing maintenance, labor, and field support.

11 Q. WHAT PROCESSES DOES SWEPCO EMPLOY TO ENSURE THE
12 REASONABLENESS OF SWEPCO'S GENERATING FLEET O&M EXPENSE?

13 A. SWEPCO uses multiple processes to ensure that its Generating Fleet O&M expenses
14 are reasonable. These include the use of budget controls, the review of cost trends,
15 and careful tracking of staffing levels at its power plants.

16 Budgets are scrutinized on an annual basis to ensure that they are reasonable
17 and prioritized appropriately. Budgets are then reviewed by both SWEPCO and
18 AEPSC Generation management for final approval. Expenditures throughout the year
19 are tracked and projected on a monthly basis. In addition, SWEPCO seeks
20 competitive bids for materials and services when it is reasonable to do so. This
21 includes work that is directly controlled by SWEPCO's Generation organization, and
22 the work performed by AEPSC on SWEPCO's behalf.

1 Another method of measuring the reasonableness of SWEPCO's Generating
2 Fleet O&M is to compare it to past years, ensuring that SWEPCO is not setting its
3 costs at unreasonably high or low levels. SWEPCO strives to prevent costs from
4 unnecessarily tracking up and down over time, by ensuring that major work activities
5 are both necessary and appropriately planned.

6 This same approach is used to ensure staffing levels at SWEPCO's generating
7 plants are reasonable. By comparing past and present years, SWEPCO can look at its
8 performance and determine if staffing levels need to be adjusted. As with budgets,
9 some changes may be warranted. For example, the addition of a large piece of capital
10 equipment may require additional personnel, which can necessitate an increase in
11 staffing levels. Any changes in staffing levels must be justified and approved by
12 AEPSC Generation management and SWEPCO management. Since the most recent
13 base rate case, this process was used to evaluate staffing levels at Flint Creek, Pirkey,
14 Welsh and Turk Plants. The staffing proposals for these Plants are contained in
15 Schedule H-7.2.

16 A. Budget Controls and Cost Trends

17 Q. PLEASE DESCRIBE ANY PROCESSES, SUCH AS BUDGETING, PLANNING,
18 AND COST REVIEW THAT ARE USED TO CONTROL BOTH AFFILIATE AND
19 NON-AFFILIATE GENERATION O&M COSTS.

20 A. The general condition of each plant in the SWEPCO system is monitored by plant
21 management and used as an input when generating a forecasted budget for the plants.
22 The budgets are created at the plant level and then are reviewed with me. After my

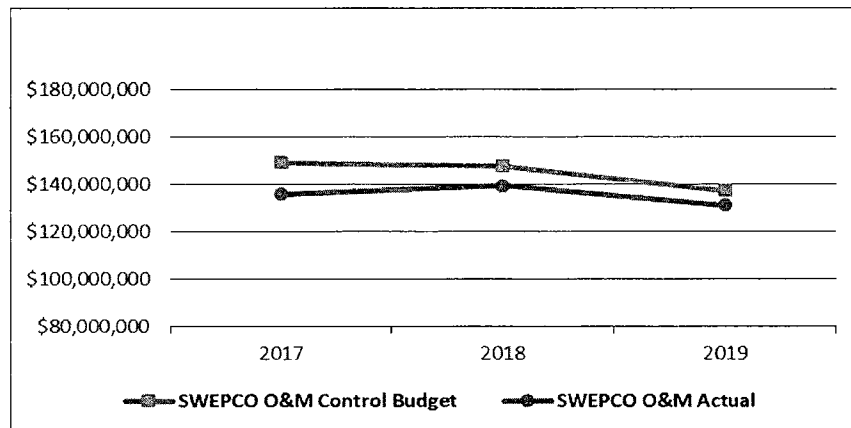
1 approval, the plant budgets are incorporated into SWEPCO's and AEPSC's budgets.
2 At each level, the individual budgets are reviewed, as well as the overall picture of the
3 generation fleet budget.

4 Actual costs are provided on a monthly basis via monthly expense and
5 variance reports. These reports are then reviewed at the plant, SWEPCO, and AEPSC
6 levels, to ensure that actual costs are in line with the planning process and that any
7 necessary changes can be made to compensate for unforeseen spending requirements.

8 Q. HOW HAS SWEPCO PERFORMED COMPARED TO ITS GENERATION O&M
9 BUDGETS IN THE PAST THREE YEARS?

10 A. SWEPCO has maintained tight control over its budget over the past three years, as
11 shown in Figure 1 below, and has maintained an average deviation from control
12 budget to actual expenditures of approximately 6%. This outcome is a result of the
13 dedication by SWEPCO's management to plan effectively, and the efforts of staff at
14 each SWEPCO plant to help the SWEPCO generation fleet as a whole when any one
15 plant may be dealing with unforeseen operational issues.

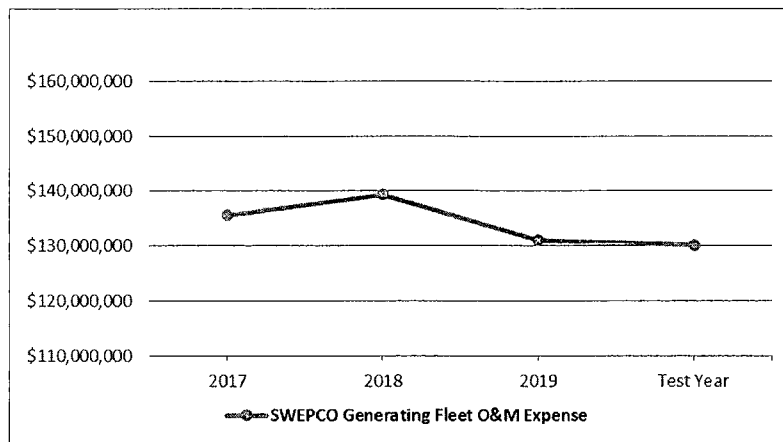
Figure 1: SWEPCO Generating Fleet O&M (Actual vs Budget) 2017 through 2019



1 Q. PLEASE DESCRIBE THE SWEPCO GENERATING FLEET O&M COST TREND
2 FOR SWEPCO SINCE 2017.

3 A. Figure 2 shows SWEPCO's Generating Fleet O&M expense from 2017 through the
4 Test Year.

Figure 2: SWEPCO Generating Fleet O&M Expenses - 2017 through the Test Year



5 Q. PLEASE DESCRIBE THE TREND IN SWEPCO'S GENERATING FLEET O&M
6 EXPENSE FROM 2017 THROUGH THE TEST YEAR.

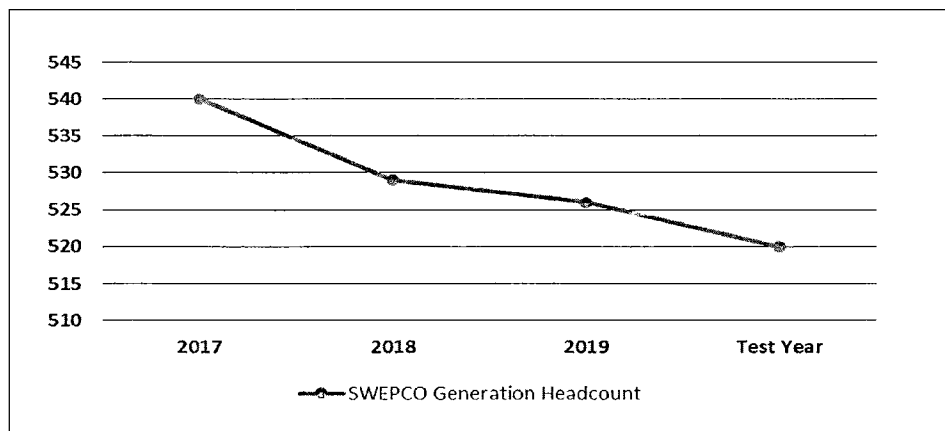
7 A. From 2017 to the Test Year, SWEPCO's Generating Fleet O&M expense decreased
8 from approximately \$136 million to approximately \$130 million. This decrease was
9 largely driven by a reduction in use of outside services.

10 B. SWEPCO Staff Level Trends

11 Q. PLEASE DISCUSS THE TRENDS IN THE TOTAL NUMBER OF SWEPCO
12 GENERATION EMPLOYEES SINCE 2017.

13 A. The general trend for SWEPCO staffing can be seen in Figure 3. AEPSC staffing
14 trends are discussed later in my testimony.

Figure 3: SWEPCO Staffing Levels - 2017 Through the Test Year



1 As Figure 3 shows, there has been a decrease in the total number of SWEPCO
 2 Generation employees, from 540 at the end of 2017 to 520 at the end of the Test Year.

3 Q. DOES SWEPCO MAKE USE OF CONTRACTOR SERVICES OR
 4 OUTSOURCING IN CONNECTION WITH THE OPERATION AND
 5 MAINTENANCE OF THE SWEPCO GENERATION SYSTEM?

6 A. Yes. While SWEPCO plants are staffed to provide support during routine operation
 7 and maintenance, there are conditions that require more personnel to complete needed
 8 work, such as a large planned or forced outages. During these occurrences, SWEPCO
 9 will augment its own staff by using contractors to perform work. In this manner,
 10 SWEPCO is able to perform large projects, without having the need to employ more
 11 people than are necessary to support the normal operation of its power plants.

12 In particular, SWEPCO outsources work during major boiler outages, as well
 13 as outages for the turbine and generator. SWEPCO regularly hires outside companies
 14 to perform work such as boiler chemical cleaning, precipitator cleaning,
 15 non-destructive testing of boiler tubes, and maintenance of coal pulverizers.

1 SWEPCO also contracts with other companies to perform general housekeeping labor
2 and janitorial services throughout the year.

3 The total number of contractors employed by SWEPCO by year is included in
4 Schedule H-7.3, and by month for the Test Year in Schedule H-7.4. In these
5 schedules, the number of contractors is shown as the equivalent in full-time
6 employees.

7 Q. WHAT DO YOU CONCLUDE ABOUT THE REASONABLENESS AND
8 NECESSITY OF SWEPCO'S OVERALL GENERATION O&M?

9 A. SWEPCO's generation O&M projects and expenses are scrutinized and approved at
10 multiple levels of management to ensure they are reasonably planned and executed.
11 Expenditures are tracked and projected on a monthly basis, budgets have been well
12 managed, and staffing is well controlled. SWEPCO's generation O&M expenses are
13 well managed and reasonable.

14 Q. DO YOU SUPPORT ANY ADJUSTMENTS TO SWEPCO'S GENERATING
15 FLEET TEST YEAR O&M EXPENSE?

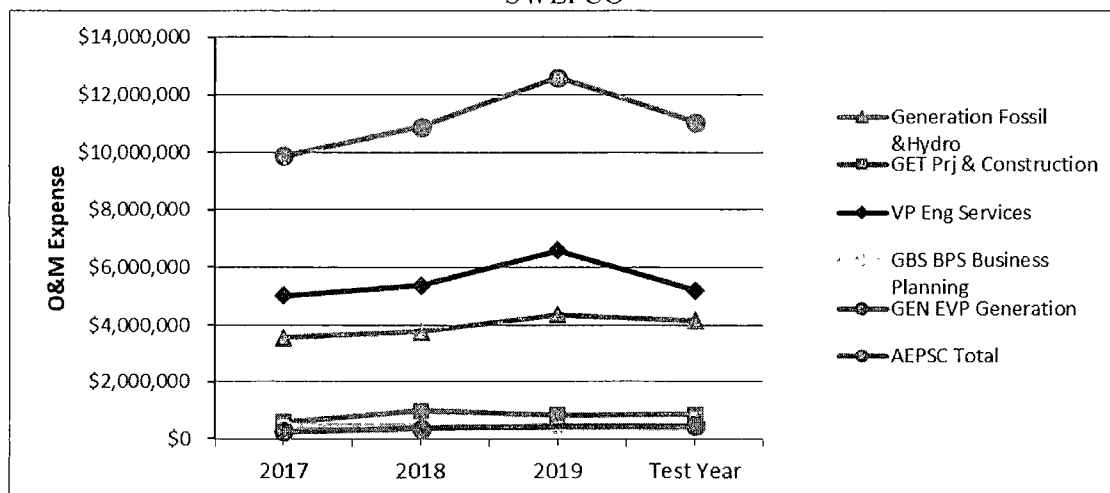
16 A. Yes, I support a pro forma adjustment to SWEPCO's Test Year Production O&M
17 Expense (as reflected in Schedule H-1) in the amount of \$616,316. This reduction
18 represents the entire amount of Test Year O&M expense associated with recently
19 retired Knox Lee Units 2-4, Lieberman Unit 2, and Lone Star Unit 1.

IX. AFFILIATE CHARGES FROM AEPSC GENERATION

Q. WHAT HAVE BEEN THE TRENDS IN AEPSC BILLINGS TO SWEPCO FOR GENERATION SERVICES OVER THE PAST THREE YEARS?

A. Figure 4, below, shows the charges to SWEPCO from the AEPSC Generation organization by department for the past three calendar years, as well as the Test Year period ending March 31, 2020. The figure excludes charges from the Commercial Operations and Environmental Services Organizations, which are supported by Company witnesses Mertz and Bond, respectively.

Figure 4: AEPSC Generation O&M Affiliate Charges to SWEPCO



Q. PLEASE EXPLAIN THE CHANGE IN AEPSC GENERATION O&M AFFILIATE CHARGES TO SWEPCO FROM 2017 THROUGH THE TEST YEAR PERIOD.

A. The trend in generation-related AEPSC charges to SWEPCO over the past few years shows an overall increase of approximately 11% between 2017 and the Test Year.

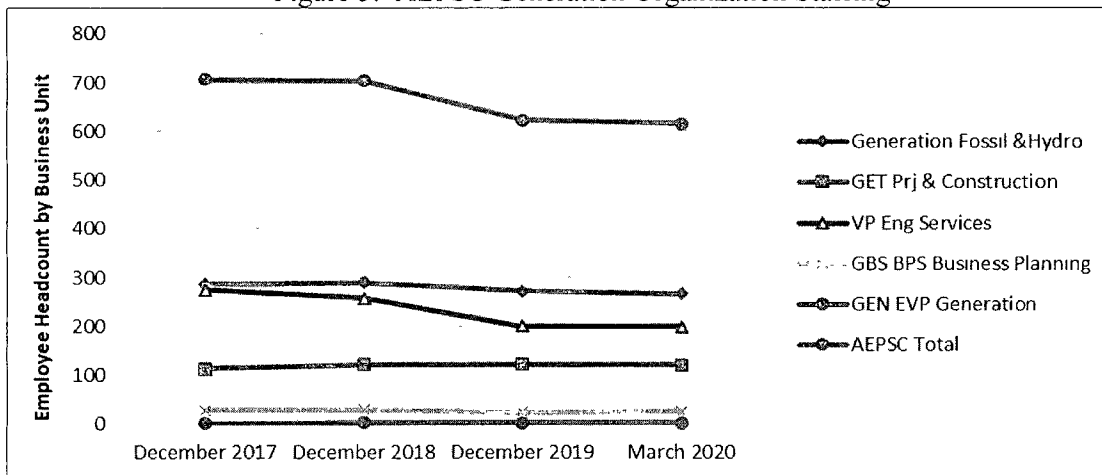
1 Q. HOW ARE AFFILIATE EXPENSES CHARGED TO SWEPCO?

2 A. Affiliate expenses are charged to SWEPCO on both a direct and allocated basis.
3 Direct charges are for service corporation services that solely benefit a single
4 operating company, with allocated charges for services that benefit multiple operating
5 companies. Allocated expenses are assigned to the benefiting operating companies
6 based on multiple criteria, including MW generating capability, number of
7 employees, and total company assets.

8 Q. HOW HAS THE STAFFING OF AEPSC GENERATION DIVISION EMPLOYEES
9 CHANGED OVER TIME SINCE 2017?

10 A. Since 2017, the AEPSC Generation organization staff has been reduced from 707 to
11 616 employees. The following figure shows the staffing trends in the AEPSC
12 Generation organization and the groups of which the AEPSC Generation organization
13 is comprised. Similar to the costs above, this excludes the Environmental Services
14 and Commercial Operations organizations.

Figure 5: AEPSC Generation Organization Staffing



1 As Figure 5 shows, AEPSC Generation staffing experienced an approximate
2 13% decrease from December 2017 through March 2020.

3 Q. HOW DOES AEPSC MONITOR AND CONTROL ITS BUDGET WITH REGARD
4 TO CHARGES TO SWEPCO?

5 A. AEPSC has a similar process for budgeting that SWEPCO follows where projects are
6 assessed and prioritized, then budgets are created based on available funds and
7 projected needs of the operating company. Those budgets are reviewed at multiple
8 levels of the organization to ensure that money is being spent where it needs to be,
9 and to ensure that the budgets are reasonable.

10 Q. PLEASE DESCRIBE THE PERFORMANCE OF ACTUAL VERSUS BUDGET
11 GENERATION AFFILIATE CHARGES TO SWEPCO FROM AEPSC.

12 A. Figure 6 shows the AEPSC budgeted and actual Generation-related expenses on a
13 total basis for 2017, 2018, 2019, and the Test Year. The average annual variance
14 between budget and actuals for the four-year period was 4.1%.

15 Figure 7 shows the AEPSC budgeted and actual Generation-related expenses
16 on a SWEPCO-only basis for 2017, 2018, 2019, and the Test Year. The average
17 annual variance between budget and actuals for the four-year period was 7.4%.

Figure 6: AEPSC Generation Total Actual vs Budgeted Expenses

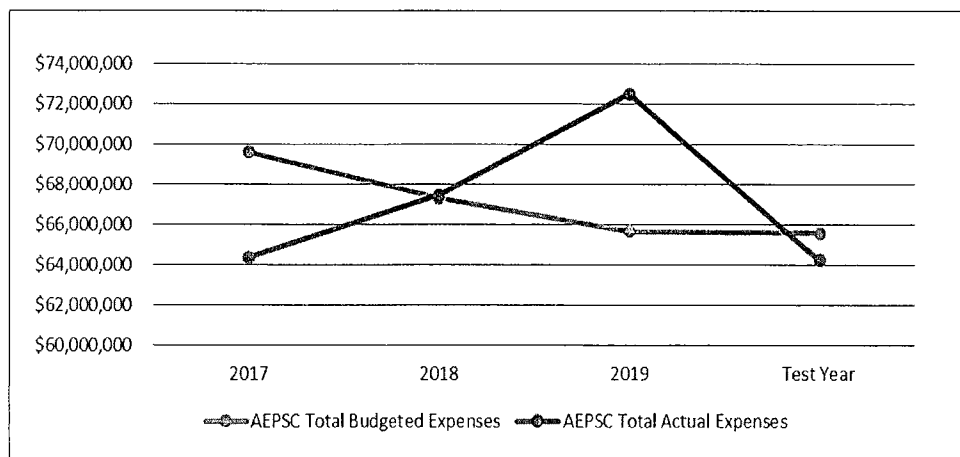
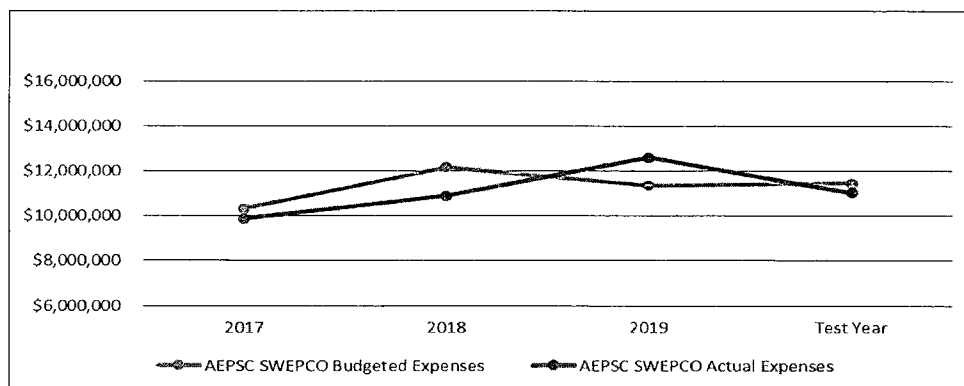


Figure 7: AEPSC Generation SWEPCO-Only Actual vs Budgeted Expenses



1 Q. PLEASE SUMMARIZE THE EVIDENCE YOU HAVE PRESENTED THAT
 2 DEMONSTRATES THE NECESSITY AND REASONABLENESS OF THE
 3 AEPSC GENERATION DIVISION CHARGES TO SWEPCO.

4 A. I support a total of \$11.0 million of Generation-related affiliate costs charged to
 5 SWEPCO for the Test Year ending March 31, 2020. This is a reasonable amount for
 6 the services provided to SWEPCO by AEPSC. The AEPSC organization adds value
 7 to SWEPCO by providing technical, operational, and maintenance expertise to
 8 SWEPCO's fleet of power plants.

1 Q. IS THE MAGNITUDE OF CHARGES TO SWEPCO FROM THE AEPSC
2 GENERATION ORGANIZATION REASONABLE?

3 A. Yes. My testimony shows not only that AEPSC controls costs effectively, but also
4 that the services received from AEPSC warrant the charges from the AEPSC
5 Generation organization.

6 Q. OF SWEPCO'S TEST YEAR GENERATING FLEET O&M EXPENSE, WHAT
7 PORTION IS MADE UP OF AEPSC EXPENSES?

8 A. Generation-related AEPSC Test Year expenses of \$11.0 million represent 8.5% of
9 SWEPCO's unadjusted Generating Fleet O&M expense of \$130.1 million.
10

11 X. PERFORMANCE OF THE SWEPCO GENERATION FLEET

12 Q. ABOVE YOU DISCUSSED SWEPCO'S PRACTICES FOR MANAGING ITS
13 GENERATING FLEET. DO YOU HAVE EVIDENCE THAT THOSE PRACTICES
14 HAVE BEEN EFFECTIVE?

15 A. Yes, I do. The North American Electric Reliability Corporation's Generating
16 Availability Data System (NERC GADS) database contains performance data for
17 more than 5,000 electric generating units, representing approximately 80% of the
18 installed generating capacity in North America with a capacity rating greater than 20
19 MW. Using this database¹, it is possible to benchmark SWEPCO's generating unit
20
21

¹ Generating Unit Statistical Brochure 2 - All Units Reporting <https://www.nerc.com/pa/RAPA/gads/Pages/Reports.aspx>.

1 fleet performance against other similar units, and track how they relate to industry
2 values.

3 Q. WHY IS IT IMPORTANT TO GROUP VARIOUS UNITS INTO PEER GROUPS
4 WHEN PERFORMING A BENCHMARKING STUDY?

5 A. It is important to group units into peer groups based on unit size and fuel type to
6 ensure that the comparison results in an "apples to apples" comparison. The NERC
7 GADS database uses both fuel type and unit size to distinguish different groups of
8 units. In this manner, coal units are considered against other coal units, and units of
9 similar size are grouped together. This provides the most reasonable comparison,
10 since comparing units of dissimilar size or fuel type would not be expected to lead to
11 meaningful results.

12 Q. WHAT DATA IS USED BY NERC TO MEASURE THE PERFORMANCE OF
13 POWER PLANT GENERATING UNITS?

14 A. The NERC GADS database includes various parameters to compare the performance
15 of power plant generating units. The measures of performance that I will discuss are
16 the 2017 and 2018 Equivalent Availability Factor (EAF) and Equivalent Forced
17 Outage Rate (EFOR). EAF and EFOR are metrics defined by NERC and are industry
18 standards for measures of performance. These metrics provide a measure of the
19 effectiveness of the Company's management of its generation fleet, when compared
20 to other similar generating units throughout the industry.

1 Q. WHY HAVEN'T YOU INCLUDED 2019 IN YOUR BENCHMARKING STUDY?

2 A. The NERC GADS database information for 2019 is not yet available.

3 Q. PLEASE GIVE A BRIEF DESCRIPTION OF EACH OF THOSE FACTORS
4 LISTED ABOVE.

5 A. EAF is the percentage of time that a unit is capable of providing service, whether or
6 not it is actually operating. Planned and unplanned outages as well as deratings
7 reduce a unit's EAF. For example, a unit that was available to run 100 percent of a
8 time-period but was derated to half load would have an EAF of 50 percent.

9 EFOR is calculated by dividing the hours of time that a unit is not available
10 for service due to an unplanned failure or condition that causes the unit to be removed
11 from service or become unavailable (forced outage hours) by the sum of (a) the hours
12 that the unit was electrically connected to the transmission system and (b) the forced
13 outage hours.

14 Q. PLEASE EXPLAIN HOW EAF AND EFOR MEASURE THE EFFECTIVENESS
15 OF SWEPCO'S PRACTICES FOR MANAGING ITS GENERATING FLEET.

16 A. The effectiveness of SWEPCO's generation fleet operations and maintenance
17 programs can be measured by the availability of its units when called upon to operate.
18 EAF and EFOR are both direct measurements of unit availability.

19 COAL UNITS 400-599 MW

20 Q. WHAT CONCLUSIONS CAN BE DRAWN FROM THE NERC GADS DATA
21 WITH RESPECT TO THE PERFORMANCE OF THE SWEPCO FLEET OF COAL
22 UNITS BETWEEN 400-599 MW DURING 2017 AND 2018?

1 A. SWEPCO's coal units in the 400-599 MW range include Flint Creek Unit 1, and
2 Welsh Units 1 and 3. Shown in EXHIBIT MAM-3, Figure 1, EAF for SWEPCO's
3 coal units in the 400-599 MW range was slightly higher than the NERC average for the
4 2017-2018 period. For the same period, Figure 2 shows the average EFOR for
5 SWEPCO's units was considerably better than the NERC average.

6 Overall, SWEPCO's coal units in the 400-599 MW range outperformed
7 similarly sized units in the NERC GADS database, when comparing EAF and EFOR.

8 COAL UNITS 600-799 MW

9 Q. PLEASE DISCUSS THE PERFORMANCE OF SWEPCO'S COAL UNITS
10 BETWEEN 600-799 MW VERSUS OTHER COMPARABLE UNITS IN THE
11 NERC GADS DATABASE.

12 A. Turk Unit 1 is the only SWEPCO coal unit in the 600-799 MW range. As shown in
13 EXHIBIT MAM-3, Figures 3 and 4, Turk excelled in both EAF and EFOR when
14 compared to coal units of similar size in the NERC GADS database during 2017 and
15 2018.

16 LIGNITE UNITS

17 Q. WHAT CONCLUSIONS CAN BE DRAWN FROM THE NERC GADS DATA
18 WITH RESPECT TO THE PERFORMANCE OF SWEPCO'S FLEET OF LIGNITE
19 UNITS DURING 2017 AND 2018?

20 A. SWEPCO's lignite units include Pirkey Unit 1 and Dolet Hills Unit 1. Shown in
21 EXHIBIT MAM-3, Figures 5 and 6, Pirkey on average was on par with the 2017-2018
22 NERC GADS EAF when compared to similar units. When comparing lignite unit

1 EFOR during the same period, Pirkey was slightly better than the NERC average in
2 2017 and five times better in 2018. For the 2017-2018 period, Dolet Hills averaged
3 approximately 28% less than the average NERC EAF and was well above the NERC
4 average for EFOR, when compared to other lignite units.

5 Q. PLEASE EXPLAIN WHY THE EAF AND EFOR FOR DOLET HILLS UNIT 1 WAS
6 BELOW THE LEVEL OF SIMILAR UNITS IN THE NERC GADS DATABASE.

7 A. At Dolet Hills, there were forced outages in 2017 and 2018 resulting from reduced
8 lignite deliveries to the plant. In 2017, the reduction in deliveries was caused by two
9 major storms that required a declaration of Miner Force Majeure. In 2018, lignite
10 deliveries were reduced by an additional Force Majeure event.

11 COMBINED CYCLE UNITS

12 Q. PLEASE DISCUSS THE PAST TWO-YEAR'S PERFORMANCE OF SWEPCO'S
13 COMBINED CYCLE FLEET WHEN COMPARED TO COMBINED CYCLE
14 UNITS IN THE NERC GADS DATABASE.

15 A. Stall is SWEPCO's only combined cycle unit, consisting of two combustion turbines
16 (6A and 6B) and a heat recovery steam generator (6S). Shown in EXHIBIT MAM-4,
17 Figure 1, Stall had an EAF of 82% in 2017, which was approximately 2% less than
18 that of similar units in the NERC GADS database. In 2018, Stall was lower by
19 approximately 8%. The lower than average EAF for Stall was due to planned major
20 turbine overhaul outages for 6A and 6B in 2017 and 2018, respectively.

21 At only 1%, Stall's EFOR was well below the NERC 5% average in 2017. At
22 3%, Stall's EFOR was below the NERC average by approximately 2% in 2018.

1 Overall, SWEPCO's Stall unit was a strong performer when compared to
2 other NERC combined cycle units in 2017 and 2018.

3 GAS TURBINE UNITS 50+ MW

4 Q. PLEASE DESCRIBE THE PERFORMANCE OF SWEPCO'S COMBUSTION
5 TURBINE FLEET DURING 2017 AND 2018 WHEN COMPARED TO SIMILAR
6 UNITS IN THE NERC GADS DATABASE.

7 A. SWEPCO's combustion turbine fleet consists of four units at its Mattison Plant. Seen
8 in EXHIBIT MAM-4, Figures 3 and 4, both individually and collectively, Mattison
9 Units 1-4 outperformed other gas turbine units 50 MW or greater, when comparing
10 EAF and EFOR to that of the NERC peer average. The 2017-2018 average EAF of
11 92% for the Mattison units was approximately 6% better than its peers in the NERC
12 GADS database. Over the same period, at an average of 2%, the Mattison units'
13 EFOR was better than that of its peers at 5%.

14 NATURAL GAS UNITS 100-199 MW

15 Q. PLEASE DISCUSS THE 2017 AND 2018 PERFORMANCE OF SWEPCO'S 100-
16 199 MW NATURAL GAS-FIRED FLEET.

17 A. SWEPCO's natural gas-fired fleet in the 100-199 MW range consists of Arsenal Hill
18 Unit 5, Lieberman Units 3 and 4, and Wilkes Unit 1. Shown in EXHIBIT MAM-4,
19 Figure 5, the average EAF for these SWEPCO units during 2017 and 2018 was 74%
20 and 70%, respectively. The NERC average for similar units was 80% for 2017 and
21 79% for 2018.

1 SWEPCO's 74% EAF in 2017 was primarily due to planned outages at
2 Lieberman Units 3 and 4, and Wilkes Unit 1. Each planned outage lasted more than
3 54 days, with an average duration of 62 days. With approximately the same total
4 number of scheduled outage days in 2018 - the largest contributors being planned
5 outages at Arsenal Hill Unit 5 and Lieberman Unit 3 - a Wilkes Unit 1 43-day forced
6 outage to repair roof tube leaks and collateral damage to tubes in the superheat and
7 reheat sections of the boiler resulted in SWEPCO's 2018 EAF being lower than 2017
8 at 70%.

9 Shown in EXHIBIT MAM-4, Figure 4, SWEPCO's 2017-2018 average EFOR
10 for the same group of smaller natural gas units was 24%, which was higher than the
11 NERC 19% average EFOR for similar units. A boiler tube leak forced outage at
12 Lieberman Unit 3 in 2017 and the previously mentioned boiler tube leak outage at
13 Wilkes Unit 1 in 2018 were the two largest contributors to the lower 2017-2018
14 average EFOR.

15 NATURAL GAS UNITS 300-399 MW

16 Q. PLEASE DISCUSS THE 2017-2018 PERFORMANCE OF SWEPCO'S 300-399
17 MW NATURAL GAS-FIRED GENERATING UNITS.

18 A. SWEPCO's natural gas-fired units in the 300-399 MW range include Knox Lee Unit
19 5, and Wilkes Units 2 and 3. Shown in EXHIBIT MAM-4, Figure 7, the 2017-2018
20 average EAF for these units was 59%, compared to 79% for the NERC peer group. In
21 addition to an 83-day planned outage at Knox Lee Unit 5 in the Fall of 2018, Wilkes
22 Units 2 and 3 had a total of 410 outage days during the two-year period. These

1 outages at Wilkes Units 2 and 3 were necessary, after SWEPCO determined that the
2 boiler Super Heater Outlet Header (SHOH) at both units were reaching end of life.
3 All repairs to Wilkes Unit 3 were completed in 2017. Minor repairs were completed
4 at Wilkes Unit 2 in 2017, with the majority of repairs completed in 2018.

5 The 2017-2018 average EFOR for the same group of SWEPCO gas units was
6 51%, when compared to the NERC peer group EFOR of 17%. As with the 2017-
7 2018 average EAF, the abnormally high EFOR was due to the SHOH outages at
8 Wilkes Units 2 and 3 that I previously discussed.

9 Q. WHAT CONCLUSIONS DO YOU DRAW ABOUT THE EFFICIENT
10 MANAGEMENT OF SWEPCO'S EXISTING GENERATING FLEET?

11 A. As a whole, SWEPCO's generating fleet is very well managed as demonstrated by the
12 NERC GADS data that compares SWEPCO's generating units' performance to peer
13 groups of units. SWEPCO is able to utilize its different units in order to best provide
14 low-cost electricity to SWEPCO's customers. The fact that SWEPCO performs well
15 against other peer utilities shows that the generation fleet is prudently managed.

17 XI. CONCLUSION

18 Q. PLEASE PROVIDE A SUMMARY OF YOUR TESTIMONY.

19 A. My testimony describes SWEPCO's diverse generating fleet, and the practices used
20 by SWEPCO to ensure the fleet is prudently managed. These include directing day-
21 to-day operations, planning, and budgeting the O&M expenses and capital
22 investments required to maintain the fleet as a reliable source of energy for its

1 customers. I have also described the changes that have occurred in SWEPCO's fleet
2 and provided the justification for those changes for which I am responsible.

3 My testimony shows that both SWEPCO and AEPSC Generation-related
4 O&M expenses and capital investments are prudently incurred and effectively
5 controlled using planning and cost tracking processes. The prudence of those
6 investments is demonstrated in the benchmarking data, which demonstrates that
7 SWEPCO's fleet compares well against its peers from a generating unit performance
8 perspective.

9 I testify to the critical role that the AEPSC organization plays in supporting
10 the SWEPCO generating fleet. The AEPSC organization provides SWEPCO with a
11 vast amount of knowledge and experience that benefits the operation and maintenance
12 of its generating fleet. Without the centralized services of the AEPSC organization,
13 SWEPCO would either have to increase its workforce or be reliant on outside services
14 to provide the extensive resources required to support its fleet. AEPSC provides
15 SWEPCO with executive leadership, management direction, and staff support, with
16 both SWEPCO and AEPSC focused on the safe, reliable, and low-cost operation of
17 SWEPCO's generation fleet for the benefit of its customers.

18 I also identified major capital projects completed since the last base rate case,
19 which were warranted to maintain SWEPCO's generating fleet in good operating
20 condition, as well as to reduce operating costs and/or improve the performance and
21 reliability of its units.

1 In summary, my testimony shows that the SWEPCO Generation organization
2 prudently manages a diverse fleet of power plants that vary in size, technology, and
3 fuel type, allowing SWEPCO to meet its customers' demand for reliable and
4 reasonably priced electricity.

5 Q. DOES THAT CONCLUDE YOUR DIRECT TESTIMONY?

6 A. Yes, it does.

